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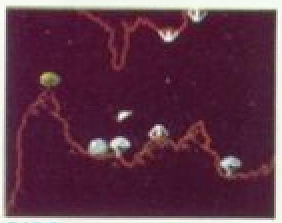
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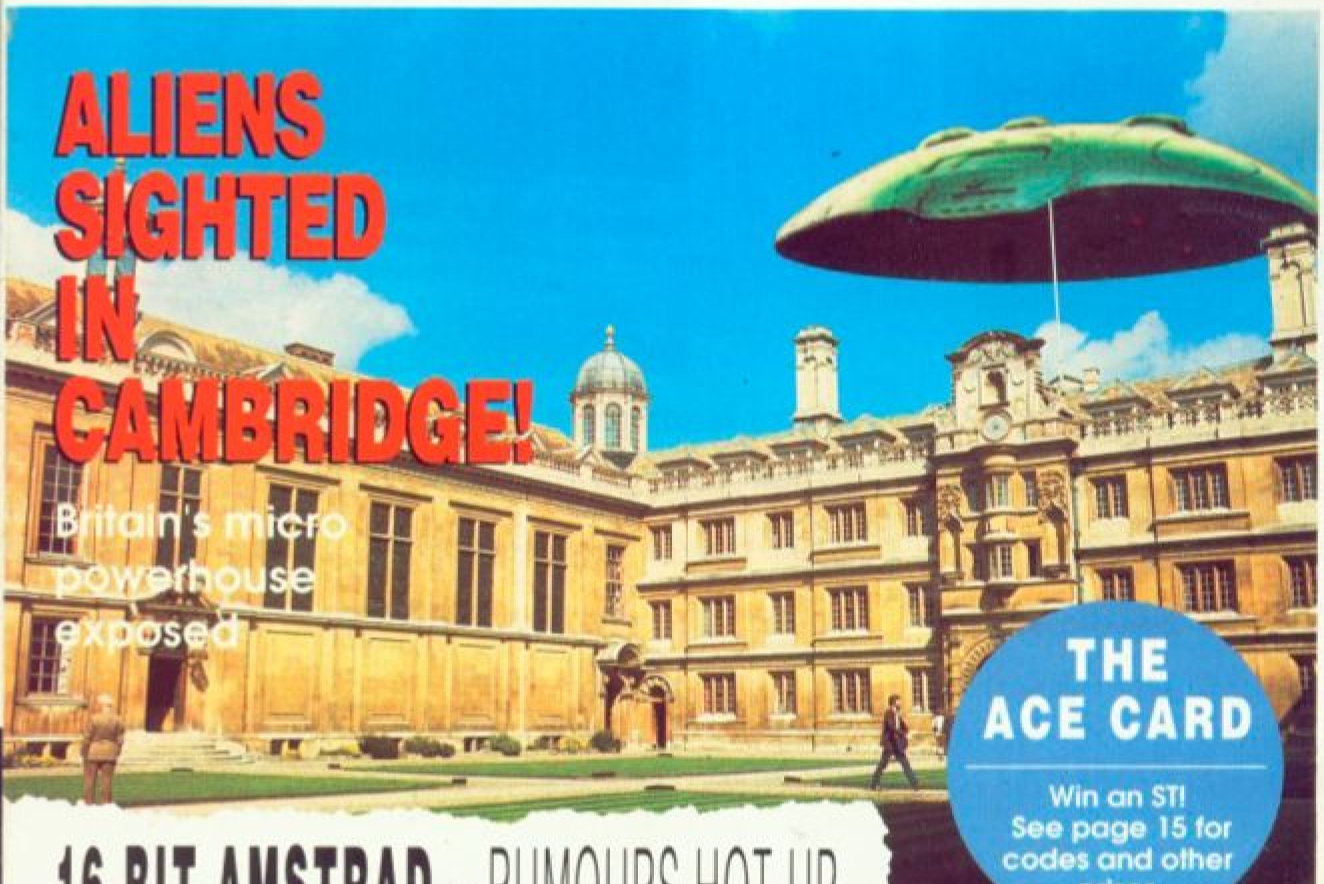

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Britain's micro powerhouse exposed

THE ACE CARD

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See page 15 for codes and other prizes

16 BIT AMSTRAD - RUMOURS HOT UP

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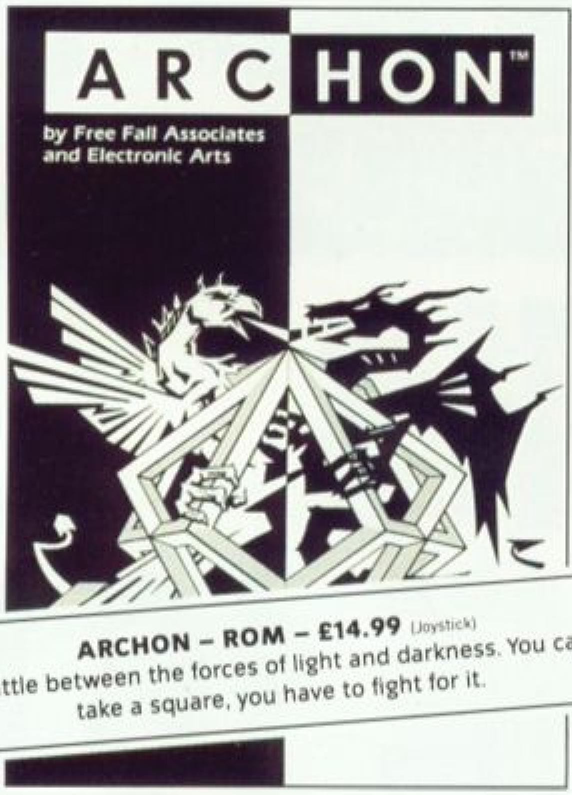
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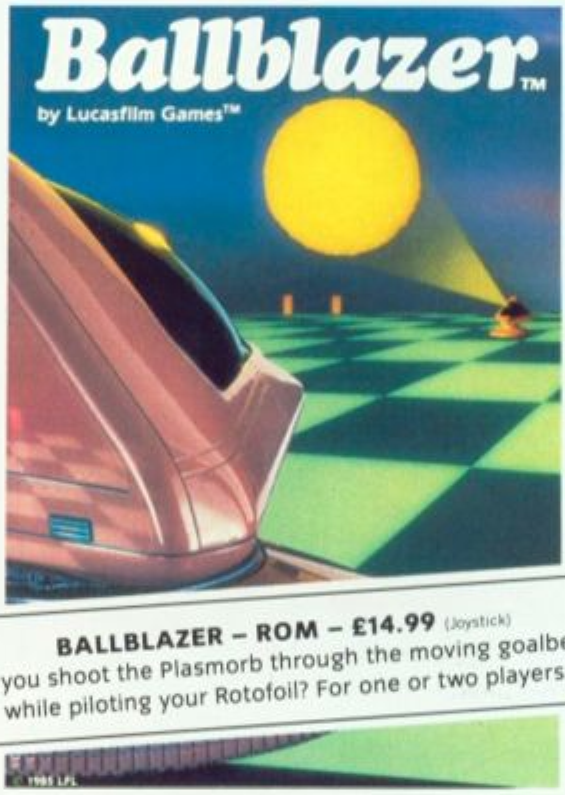
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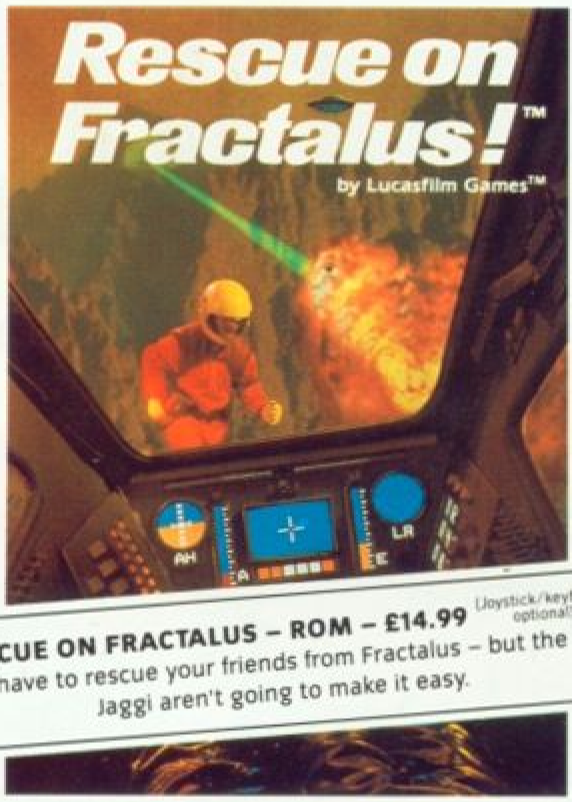
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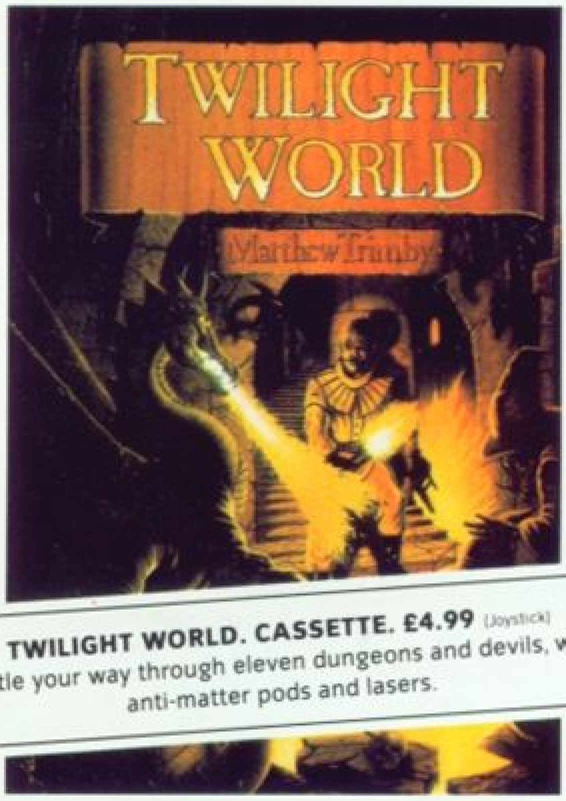
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ATARI

SPECIALS

31 Silicon Spires

Zarch on the ST, the new **Spectrum-compatible computer**, Atari's transputer workstation – all **up and running**, and **all in Cambridge**. Andy Wilton dons cap and gown to investigate.

Jack Lang of Perihelion with transputer add-on board.

36 The Meaning Of Life

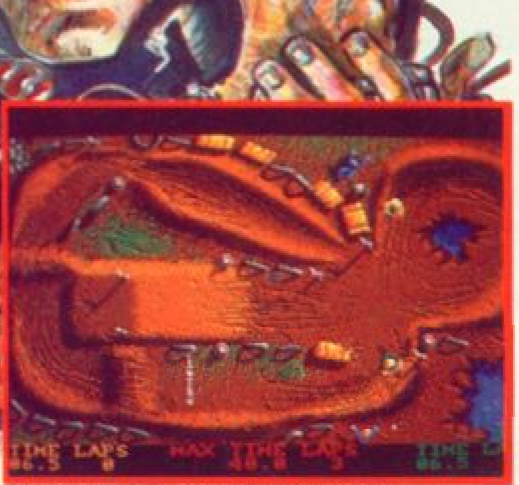
Could the aliens in your shoot-em-up actually **learn to fight back?** Could they – gasp – undergo a **hideous process** of evolution and **take over** your micro? ACE considers some **very disturbing** possibilities...

74 Strategy Special

Firezone from PSS and CCS' ***Overlord*** feature in this month's investigation of the **latest strategy software** – whatever you **dish out**, these games won't take it **lying down**.

70 Double Trouble

Are you a **competitor** or a **collaborator**? Do you yearn to **knock the stuffing** out of your mates in *International Karate*, or to fight **side-by-side** in *Ikari Warriors*? ACE **joins the scrum** with an authoritative guide to **the best in multi-player action**.



On yer bikes – two-player pedalling in *BMX Simulator*.

INTERFACE

7 News

Amstrad 16-bit machine – the rumours flourish... Major changes for **US Gold programming policies.**-.. **Telecomsoft 'relaunch'**... Bye-bye **Ariola**, hello **Exocet, Mandarin, FTL**...

18 Previews

Tomorrow's games **strut their stuff** on today's pages.

Electronic Arts' *F18 Interceptor* ready for take-off.

97 Letters

A **heartwarming tale** of how to trade in a Commodore 64 for an ST pops through Uncle Pete's letter-box.

130 The Blitter End

Last month's **winners**...and a few **losers** as well.

SIGHT...

21 Pixels In Motion

Brian Larkman gives you the **low-down on animation techniques** and suitable packages for 16-bit machines.

...AND SOUND

81 A Is For Apple...

...and **M is for MIDI.** We continue our **plain-speaking guide** to the new world of MIDI. Don't be **dumb**, be **noisy**!

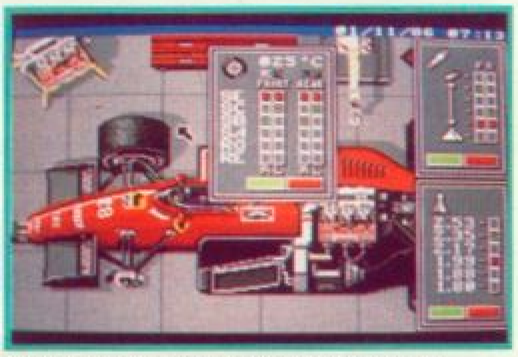
83 Midi Panel Of Experts

Mark Jenkins addresses himself to some of your MIDI problems...

GAMEPLAY

43 Screen Test

The most **authoritative reviews**, the **latest games**, and the world's **most comprehensive rating system**. This month, *Dungeon Master* and *Oids* cause a **16-bit sensation**.



Ferrari Formula One – in the pits, but definitely not the pits.

No pink elephants, just deadly pink worms in state-of-the-art *Dungeon Master*.

26 Arcade Ace

Pac-who? Haven't we seen this **running**, jumping, **pill-gobbling**, ghost-chasing, maze-wandering **globule** somewhere before? What's he doing around in **1988**? Find out here.

68 Updates

The **latest conversions** for **your** machine. Amiga owners get *Mercenary* AND *Bonecruncher* – what do **you** get?

THE ACE CARD

Page 15 tells you if you've won an ST or one of 24 other mouthwatering prizes. And if you haven't got a card, find out on page 15 how to get your own unique chance of winning some of the best prizes around, every month in ACE.

76 Play By Mail

Second of ACE's occasional forays into the world of play-by-mail. This time we check out the **latest PBM convention** in London.

85 Tricks 'n' Tactics

Wotta lotta maps. Feast your eyes on the **hideous secrets** of *Terramex* and *Platoon*, plus **ST pokes** for *Backlash, Black Lamp* and **more besides...**

103 Adventures

Infocom's *Sherlock Holmes* isn't **exactly elementary,** my dear Watson. Plus more on **role-playing**, Pat's Patch, **Shades Diary**, and a host of other goodies.

Sherlock Holmes – Infocom get back on form in Victorian London.

BUY LINES

77 Subscription

A **superb Spectravideo joystick** worth 14.99 – yours **absolutely free** when you take out a subscription.

78 Special Offers

Not just **any** games on these pages, but some of the **best you can buy**. And we're offering **up to £4 off!**

41 Competition

Barry Norman **eat your heart out...Mirrorsoft** offer you the chance to win **free tickets to the cinema for a WHOLE YEAR!**

ACE PINK PAGES

107 Buyer's Guide

Ten leading computers **exhaustively reviewed and rated,** plus over fifty **ACE recommended games** for your collection.

124 Random Access

The infamous ACE **prize puzzle**, plus a crossword and other tid-bits to **furrow your brow**. Come on now, you didn't think we were going to let you read this magazine and not DO anything, did you?

126 Readers' Pages

Don't ask us what's on them – **you wrote** the copy, **submitted** the adventure contacts, **demanded** the penpals, **offered** the software, and **advertised** the user groups. We just gave you the pages, and they're **all yours.**

Oi!

...You! This is the ACE Team speaking. We wanna have a *few words* with you, alright?

We just thought we'd like to tell you that we reckon this magazine is the **best on the shelf**. Yeah, we know, you've heard it all before, but just for the record, we're going to tell you **WHY** we think it's the best.

First off, it's aimed at a **different type of reader**. Someone like you, someone with **brains,** with **discrimination**...not someone with **nappy-rash**, but a real man-about-town who **knows what he wants** in a magazine.

You want in-depth, **authoritative** reviews, written by people who **really know** a good game when they see one, and have the guts to **speak out** when they come across a **stinker**.

You want a **rating system** that leaves no loop-holes, that tells you which game you'll still be playing in a **year's time**, and which one will end up in the **bin**.

But you want **MORE** than just games, games, and more games...

You want **in-depth features** on the white-hot cutting edge of computer entertainment....You want the **skills** that will turn your monitor into a **blistering display** of **pixel mastery**...You want the data that will **transform your humble synth** into a **state-of-the-art** music machine.

You want the **news**...the **pokes**..the **competitions**....the **previews**...the **special offers**...the **puzzles**...the **buyers' guides**..

You want **the lot** – and we **give** it to you...

So **don't hesitate** – take this mag to the counter right now. It's the **latest issue** of Britain's **fastest moving new micro magazine**, and it's not going to be on that shelf for long.

● ***The ACE Team***

ADVANCED COMPUTER ENTERTAINMENT

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ATARI COIN-OP SENSATION

A Midlands coin-op company has developed a revolutionary coin-op arcade console that promises to close the gap between home computer software and the arcades.

East Midlands Leisure, have produced a cabinet based on the Atari ST, but unlike the Arcadia Amiga-based system, which uses Amiga boards and plug-in chips, the EML system loads its games from disk. As a result, almost any ST program can be converted in a matter of hours to run on the machine, and already EML have signed up US Gold's *Trantor* for imminent release. Other titles under negotiation include Palace's *Barbarian*, some of the best-selling Infogrames titles, and Tynesoft's ST shoot-em-up *Plutos*.

'Our system is miles better than the Arcadia set-up', claimed engineer Alan Nelson, 'They still use of ROM boards, which are expensive and can be damaged very easily. Using the disk system we can modify existing software very easily, and we've tested the system for seven months without any problems.'

EML also claim that their display will be better than the competition, since they're using a 21 inch hi-res Hantarex screen, as opposed to the TV tubes still in use by other manufacturers.

REVOLUTION

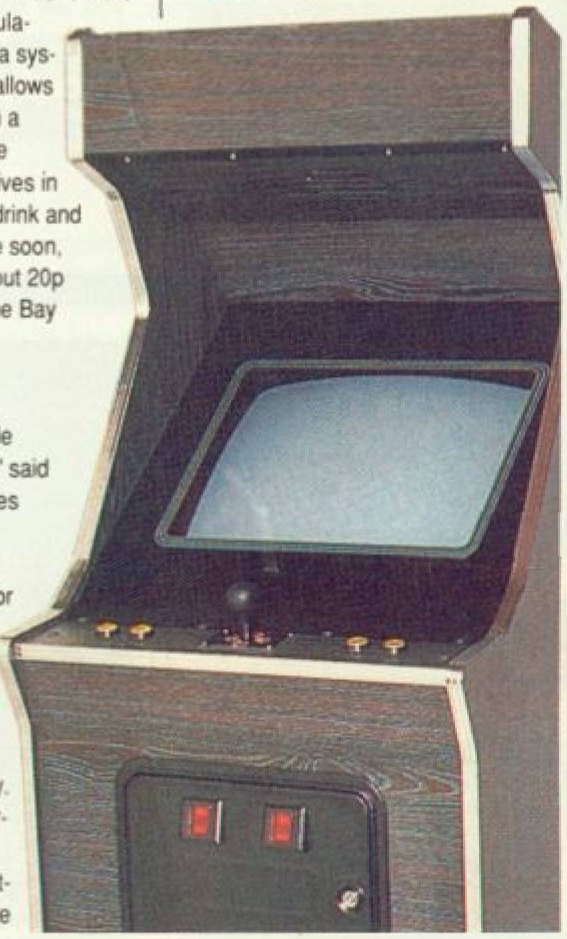
If the Intec Video System (as it's called) is all it's cracked up to be, it could revolutionise the relationship between the arcades and the home computer industry. Software houses will be able to supply their current hits to EML, who by adding a short routine can make it compatible with the system.

What's more, EML intend to release software of all kinds on the machines, including simulations. 'We've developed a system,' Nelson says, 'that allows the player to buy time on a simulation program in the same way that you buy lives in an arcade game.' Don't drink and fly could be the message soon, with pub-goers shelling out 20p for a quick flight round the Bay with *Flight Sim 2*.

CHEAPER

'The distributors of arcade machines are very keen,' said Nelson, 'and our machines are cheaper – between £1200 and £1500 compared to around £1900 for the Arcadia systems. What's more, we can change the game on a machine in 20 seconds, and distribute the software on disks very easily. There's also a huge overseas market...'

ACE will be playtesting the new system in the next few weeks. In the meantime, there's no doubt that instant conversion to arcade format could have a huge impact on the software business. 'We'll certainly do it again if it works out,' said US Gold's Richard Tidsall. ●



The new Intec Video System – home software straight into the arcades.

AMSTRAD – WHERE NOW?

'If he's going to get into the market, he's going to have to be quick...' declares Tim Chaney of US Gold; 'If he's NOT doing something, he's mad', Bernard Dugdale, Elite; 'If he DOES produce an Amiga clone, we'd be very flattered', this from one Commodore source, '...and we'd take legal action'.

Just a few of the random remarks overheard by the ACE team over the last few weeks on the subject of Alan Sugar's much rumoured new 16-bit machine. Just what IS the state of the rumour these days? Is there REALLY anything cooking in Romford? Or has Amstrad, heaven forbid, turned its back on the entertainment market?

The latter view is supported by two main arguments. The first is that Amstrad's profits are currently based largely on the sale of their small business computers; the second is the alleged difficulty of getting hold of new CPC machines. 'I've heard he's stopped manufacturing CPC's altogether,' remarked Rainbird's Pete Moreland, 'nowadays whenever we try to get a machine we have to settle for second-hand.'

Mr Sugar has no doubt on that last point. 'It's not true.' he told ACE, 'We're making more CPC's than ever before.' But what about future commitment to the entertainment industry? Nick Hewer, speaking for Amstrad, points out that 'At the moment, the bulk of our turnover is in the computer business, and there is a vibrant seasonal market for the games machines...'

First point of uncertainty - Mr Hewer says games machines, and not games computers....

'We have no intention,' he continued, 'of lessening our grip on the games market and have every intention of keeping our leadership of it.'

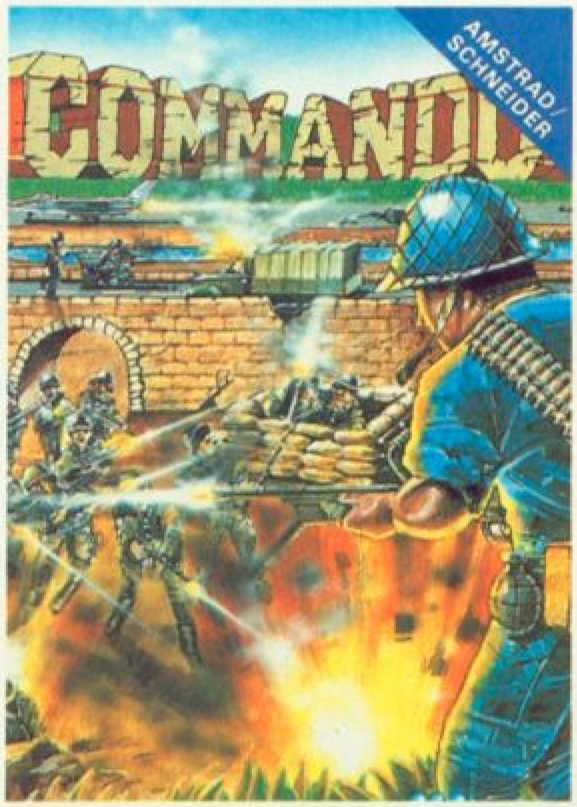
Second point, it doesn't take an IQ of over 10 to see that simply turning out CPC machines is not going to keep Amstrad on the cutting edge of the computer market. So what will they come up with? 'They haven't got a track record for producing anything new,' points out Andrew Hewson, 'so the only thing I can think of is an ST or Amiga clone.' Which is just what a lot of other people have said.

Commodore would undoubtedly take Amstrad to court if the company attempted to produce an Amiga *computer* clone, but what about a licensed Amiga-based *console*, which wouldn't conflict so heavily with Commodore's market?

'That would be a different proposition,' said our Commodore source, 'it's certainly an interesting idea...'

It certainly is. Amstrad sell the hardware, Commodore scoop the royalties, and the software houses sell more games. Whatever the answer, there's *something* in the air. Meanwhile, rumour has it that Amstrad have decided to call the new machine a...Sinclair.

'I can't comment on that. We never talk about new products,' countered Mr Hewer. ●



ELITE GO BUDGET

Be prepared for classic Elite titles including *Commando, Airwolf,* and *Frank Bruno's Boxing* to tumble into your lap for a bargain £1.99 in the next few months. The company are moving into the budget arena, either with a new label or through a third party, and will be producing many of their old hits at the new low prices.

'We're still examining all the options available to us,' said company budget spokesman Pete Kury, 'but if we do it all in-house we'll definitely be launching a new label. All will be revealed by May or June.'

At the same time, the company are pushing hard into the growing 16-bit market and they're particularly proud of ST *Buggy Boy* and *Space Harrier.* With any luck the budget move will enable the company to scoop some revenue that can be ploughed into development of more expensive 16-bit releases.●

Commando – yours soon for £1.99.

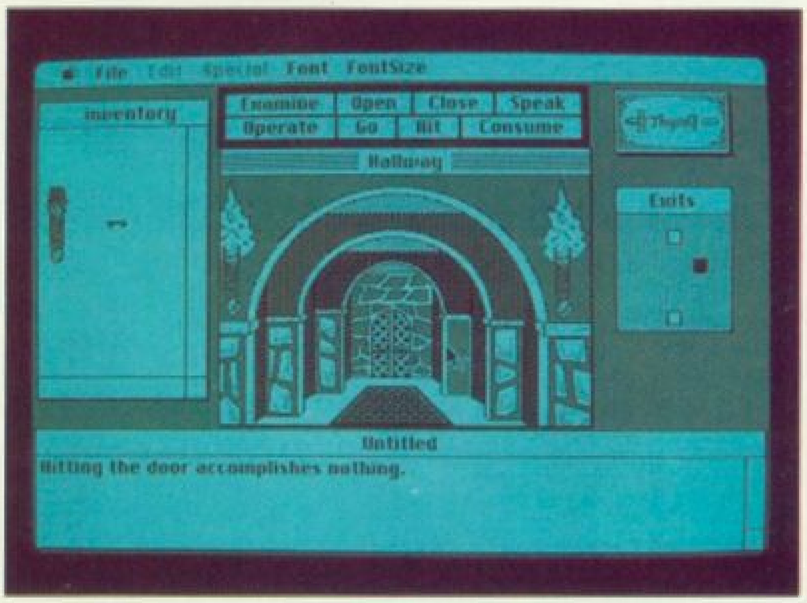
TELECOMSOFT GRAB US BLOCK-BUSTERS

Icom Simulations, who produced up-market, hi-tech icon driven games such as *The Uninvited* and *Deja Vu* for Mindscape in the States, have set up a programming team in the UK and signed up with Telecomsoft.

Six titles are in the pipeline, including *Deja Vu 2* and a 'superbly animated shoot-em-dead game set in the Wild West'.

Suprisingly, Icom do not plan to concentrate on icon-driven adventures in future, but mean to move into the arcade game arena. 'We'll be producing fast-action graphical arcade games for the ST, Mac, and Amiga. Commodore 64 versions will also appear, though we aren't sure at this stage whether we'll do them ourselves or contract them out,' said Jake Glover, Icom UK's managing director.

Apparently Icom are planning to move all their games programming work to the UK, perhaps because costs here are lower. Meanwhile the American division is to move out of the entertainment area and begin programming business software. Looks like the Americans are waking up to the fact that Europe, and the UK in particular, is where the action is nowadays.●



Hitting the door accomplishes nothing.

Shadowgate– a delicious Icom game on the Mac. Now there's more to come via Telecomsoft...and for more formats, too.

CRAM YOUR FINGER ON THE DIAL

If you've got a modem and the software to go with it, Telemap and Compunet have both got news for you. Telemap are the company who brought you Micronet, Prestel's online magazine for computer boffins, but their latest service aims to entertain all computer users.

Called Hotel California, the service is open to anyone over 18 who's got the equipment to log on. There's no subscription to pay: you're charged for the time you spend online, at between 25p and 38p a minute, with the cost added directly to your phone bill. For the money you can access games, classified ads and a mail-order service run by catalogue moguls Kays.

The real hook of the service, however, should be the open and private chatline services offered. You can meet strangers for an online chinwag or confer with friends. What's more, the system links up with Micronet's Teletalk service so you can swap computer-minded banter with any of its 20,000 or so members.

The service is fully operational now – just set your comms equipment to 1200/75 viewdata and dial 0898 10 0890 – but is being run on a trial basis for the next three months. One of the things Telemap hope to find out is whether people are prepared to pay 25p a minute for an online service. 'It's not an unreasonable price' claimed PR man Dave Rosenbaum. 'You'd have to pay the same to use any 0898 service, so we don't think it'll be a problem.' In practice the pricing is pretty much forced on Telemap by BT's charging structure, and could prove to be the service's Achilles' heel.

All Compunet's services are still very much subscription only, but they've just expanded to take in the world-wide micro news column Newsbytes. This weekly service has been making quite a name for itself on networks in the States, where it was voted 'Best Online Publication' last year. The UK news on Newsbytes comes from Steve Gold – best known for his part in the hacking of Prince Phillip's Telecom Gold mailbox – but there's also info on the micro scene in Europe, Japan, Canada and the USA itself. At a hefty 10,000 words or so per week there's plenty of reading matter there for the news-hungry ST, Amiga or C64 owner.●

TOGETHER WE STAND....

A national TV ad campaign to improve the 'spotty kid' image of computer entertainment was high on the agenda as the cream of the industry poured into a luxury Jersey hotel recently and backed the call for a new software publishers' association.

Since the demise of GOSH (Guild of Software Houses) there has been no effective representative body for the companies who produce our games. That's bad news for all of us, because the only way we're going to see computer games really take off is if the market can be expanded to support expensive new projects. Everyone realises that 16-bit games can cost a packet to develop, so unless there are more people to pay for them we can kiss truly advanced computer entertainment goodbye.

The good news, then, is that those present – which included major players such as Elite, Hewson, and Electronic Arts – voted strongly in favor of a pilot study and the establishment of an organisation that could give us a bit more street cred. Let's keep our fingers crossed that whoever's piloting the study knows how to fly... ●

VERMINATOR – BLACK LAMP EXTERMINATOR?

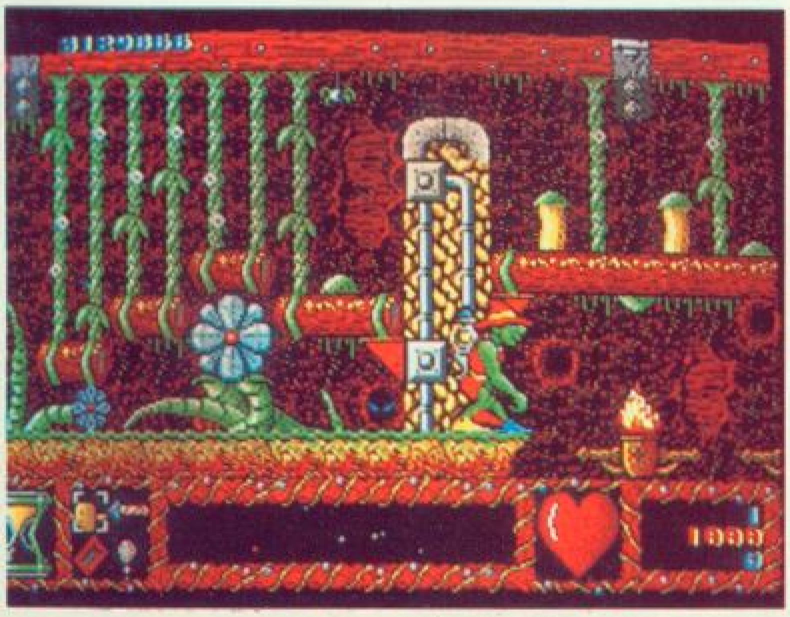
Nigel Brownjohn

One of the problems with 16-bit software is spending lots of money on developing games with megazarjazz graphics, and ending up with sub-8-bit gameplay. Games like *Dungeon Master* offer hope for the future, but we're still getting offerings like Firebird's *Black Lamp*, which looks stunning but falls down seriously on the playability stakes.

Nigel Brownjohn, designer of Rainbird's *Verminator* (programmed by Chris Hinsley), has strong views on this. At first sight, *Verminator* looks disturbingly like another *Black Lamp* – fantastic graphics, but apparently very little to do except run, jump, and zap. 'There's so much more to it than that,' counters the confident designer, 'this game is going to be a *Black Lamp* killer. Basically you have to set up a successful business as a 'verminator'. That means either going around destroying pests and working your way up the ladder, or you can try other methods...'

What other methods? 'Well, you could go to the banks and borrow lots of money, or you could go to The Mob and borrow even more money. You could even go gambling. Trouble with having lots of debts, however, is that the various institutions will get stroppy if you don't pay up, and start sending killer droids after you...'

Verminator is due out in May – watch out for the definitive ACE review. ●

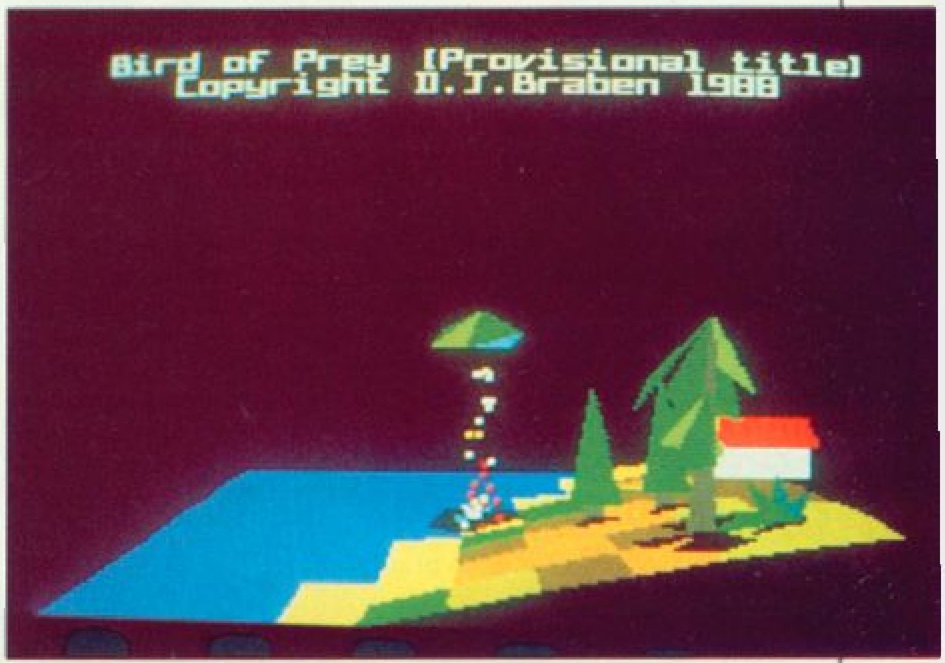


Verminator - pretty and playable?

TILT, BURN, AND FIRE...

New-look Telecomsoft budget label Silverbird are on the verge of releasing ST *Thrust*, and about time too. The game's been ready for ages and it's good stuff – fast, sensitive and very tricky with four new planets compared to the 8-bit versions – so it could have been a nice little earner over Xmas. But even with a very reasonable £9.95 price tag it may not do so well now, with the spectacular Oids to lure tilt-burn-fire fans away.

Not to worry: Telecomsoft have a secret weapon in the form of *Zarch*. Rainbird's ST and Amiga versions of this classy tilt'n'burn 3D shoot-em-up won't be out until the summer, and probably won't even be called *Zarch* – current working title is *Bird of Prey* – but as mentioned in our 'Silicon Spires' feature (page 31) the ST version is already looking very good indeed. Fans of interesting and unusual control methods (not to mention amazing graphics) should start forming an orderly queue now – and let's hope this one doesn't get held up for six months or so! ●



ST *Zarch*, aka *Bird of Prey*: Remember, you saw it here first!

IN BRIEF...

BT BUY BO

Bo Jangeborg, the programmer who thrilled Spectrum owners with the isometric adventure Fairlight three years back, is now working on his first 16-bit title for Telecomsoft. A new Spectrum title, *Resolution*, is also under development and due for release...

AUF WIEDESEHEN, ARIOLASOFT

After three years this side of the North Sea, German games house Ariolasoft have pulled out of the UK software market. According to Ariolasoft UK head man Willi Karmincke the firm had 'failed to make enough of an impression on the market' – this despite some great games like *Deactivators*, *Red LED* and *They Stole a Million*.

If you were looking out for those Magic Bytes titles that Ariolasoft were planning to publish over here, don't despair: Gremlin now have UK rights to the games, with the first of them – *Vampire's Empire*- reviewed this issue. Stay tuned for *Paranoia*, *The Pink Panther* and others in the very near future.

SYDNEY CLAIMS

Since their management buy-out, former CRL budget label Power House have signed a publishing deal with confusingly named Vancouver-based games programmers Sydney Development Corporation. Under the deal, Power House get to sell old Sydney titles like Spectrum *Dambusters* and C64 *BC's Quest for Tyres*. Strangely their press release on the subject described the games as 'recently successful' – how many years ago is 'recently', guys? – and came with a photo of Sydney Opera House. Either they don't know where Vancouver is, or they're trying to be funny...

US GOLD GO ACE

...for advanced computer entertainment, that is. Full-price software houses need to spend longer developing games so that the resulting products are better. Don't just take our word for it: listen to the software houses themselves. At the *Platoon* launch a couple of months ago Ocean boss David Ward explained how his firm would be concentrating their efforts on fewer titles in order to raise the quality.

For one of the country's largest software houses to make that kind of decision is good news, but Ocean aren't alone: now games giants US Gold have followed suit. As product marketing manager Richard Tidsall explained, 'This year US Gold will have 20 mainline titles excluding compilations, compared with around 30 last year - though there will also be six Capcom conversions and 10 Rainbow Arts titles marketed and sold in their own right.' This drop in output will allow an emphasis on 'fine tuning' the games, he added, coupled with extensive playtesting and - the best news of all for many ACE readers - a 'massive investment' in products for 16-bit machines. ●

IN BRIEF...

Telecomsoft *Thrust* expert Colin Fuidge gets in a spin at the top of the Tower and loses a life...

TOWERING TELECOMSOFT

ST *Thrust*, now sadly overshadowed by Mirrorsoft's excellent *Oids*, was one of a host of new games recently on show at the top of the Telecom Tower. Other goodies included *Starglider II* on the Amiga (versions due out in June or July), *Verminator* (see story elsewhere), and *Legend of the Sword* – a graphical adventure featuring a combination of menu-driven commands and text entry. Star of the show, however, was undoubtedly an almost-finished version of *Carrier Command*, showing a superb solid 3D display shifting pixels at an alarming frame rate.

In the fabled restaurant (no longer open to the public, alas) high above old London town, Telecomsoft also brandished new logos for the three 'Bird' labels and coughed up a lavish lunch for those present. After several glasses of vino the assembled hacks began to wish the landscape around them would stay in one place – funny that, since the Tower only started to revolve AFTER the welcoming drinks. ●

UP, UP AND AWAY

ACE co-editor Pete Connor looks more confident in the above pic than he feels – not surprising since journalists invited to share the pleasures of the high life with Major 'Wild Bill' Stealey of Microprose came in for a little more than they bargained for. Pete took to the skies with the American air-ace – who claims to be an adviser to the Pentagon – and soon found himself in a headlong dive towards terra firma, ending with a sharp pull-up and a 3G dose of centrifugal force. Below you can see what he looked like afterwards – doing a good job of holding back his breakfast. ●

CASCADE RAF LICENCE

If you thought US Gold's people licensing (Charlie Chaplin, Marilyn Monroe etc) was wacky, how about the deal Cascade have just pulled off: They've got the licence for an official Royal Air Force game. It's good news for injured RAF personnel and their dependents – the licence fees paid go to the RAF Benevolent Fund – and Cascade are pretty chuffed too. In the US market where Cascade flight sims *Ace* and *Ace 2* did so well, the RAF are apparently regarded as an elite force – and that makes them a very marketable commodity indeed. ●

ACE ON THE ROAD...

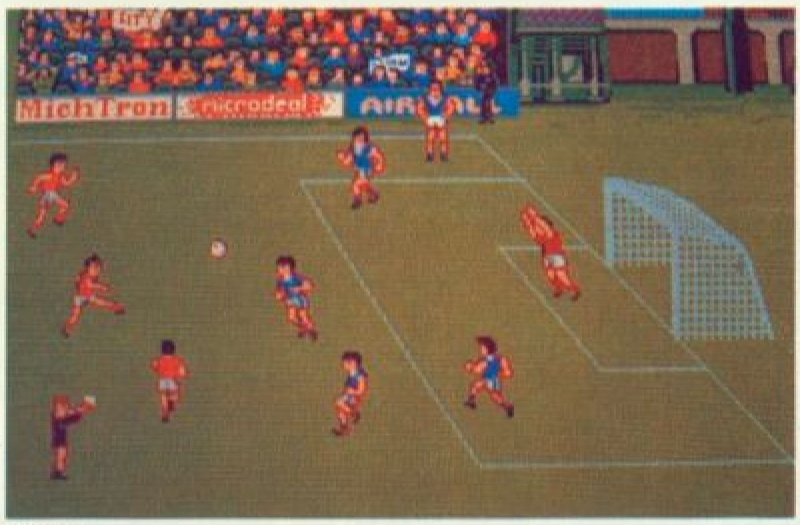
First in a new series of roving mini-reports. This month we trip down to St Austell for a visit to MICRODEAL.

Microdeal are one of those software houses who don't set up a big hue and cry about everything; yet they've been around in the 16 bit market as long as anyone, and have consistently turned out some of the most popular games for Amiga and ST. Amazing to think that for years they were world-beaters with software for the....Dragon. A trip to the picturesque seaside town of St.Austell in the Duchy of Cornwall revealed Microdeal's history and what they've got up their sleeve for the rest of '88.

John Symes – looking towards the Amiga.

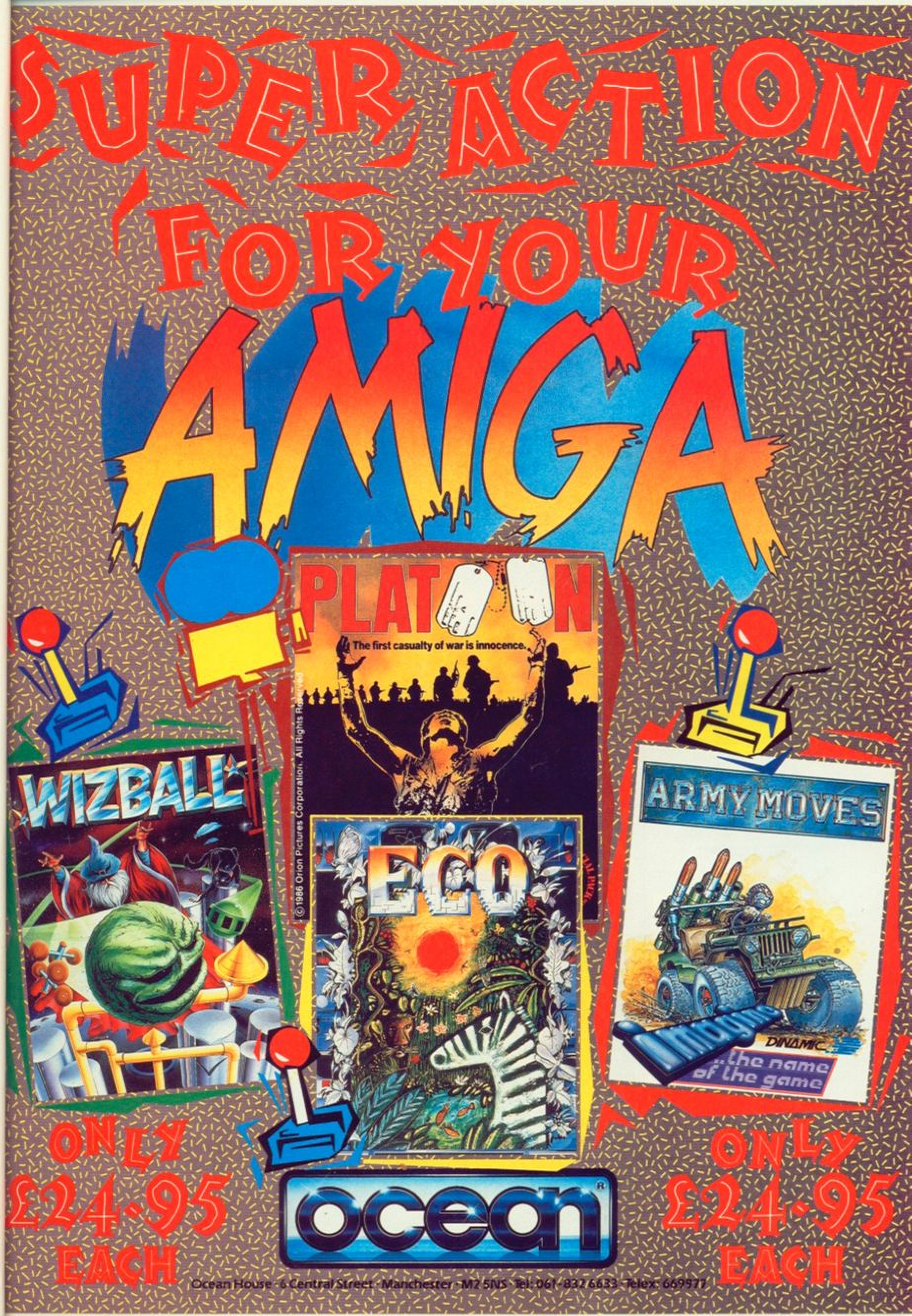
Eagerly awaited by 16-bit shoot-em-up fans will be *Goldrunner 2*. Those who are fed up with the straightforward scroller will be relieved to hear that it's not just the same old thing as it's predecessor; elements of *Defender* creep in as you try to collect obects on your travels. It's exceptionally fast and smooth-scrolling, and looks as though it will be very playable when released in a couple of month's time. You wil also be able to buy a couple of scenery disk to prolong your interest - they should cost around £10.

Leathernecks is Microdeal's long-awaited combat game, reminiscent of *Ikari Warriors* in its manic killing action. The main attraction here is the 4-way joystick adaptor that Microdeal will be marketing for use with the game; it plugs in the ST's parallel port and will probably cost around £6.00. While the idea is to co-operate, you can actually shoot your buddies in the back...and hear them scream.



ST Soccer

While all the above programs are for the ST, Amiga owners should not despair; they'll all be converted. And this summer should see an Amiga version of *Airball*, the 3D arcade adventure that was such a big hit on the ST. In fact, John Symes says that Microdeal could well be moving away from the ST and toward the Amiga as a development machine over the coming months. It's a long way from the ZX80 their first programs were written for. ●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Snippets...

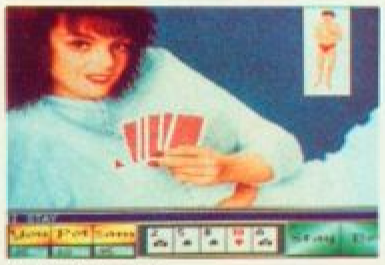
Up and coming titles for your micro.

STRIP POKER 2 (PLUS)

Anco

Amiga	£14.95dk
Atari ST	£14.95dk

If it's female pixel flesh you want, then Anco hope to have just the thing for you. There's a smidgeon of male pixel flesh too in the form of a small on-screen character that represents the player – lose a hand against someone like the delectable Sam, and your on-screen representation sheds some clothes.



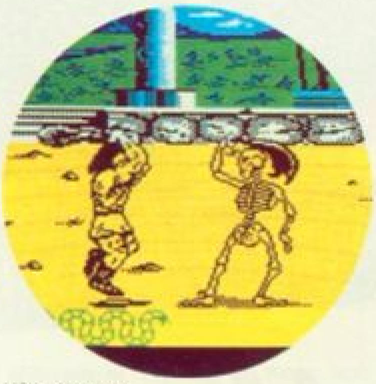
AMIGA - *Strip poker*

HERCULES

Gremlin

Spec	£7.99cs	£12.99dk
Amstrad	£9.99cs	£14.99dk
MSX	£7.99cs	

Ancient Greece is the setting for this arcade adventure that gives the player the chance to battle it out with skeletons and minotaurs in an attempt to complete 12 terrible tasks. Backdrops for the action include Greek temples and Hades – look out for it in the near future.



MSX – *Hercules*

STAR RAY

Logotron

Amiga	£19.95dk
Atari ST	£19.95dk

This fast 'n' colourful shoot-em-up looks ever so slightly like that all time classic *Defender* – and why not? If this is the sort of blast you're after, look out for it sometime in May.

MIGHT AND MAGIC

Activision

C64/128	£24.99dk
IBM PC	£29.99dk

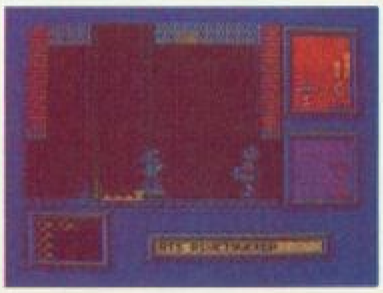
For Fantasy role-playing fanatics, *Might and Magic* looks mighty interesting. You've got 94 spells to cast, 250+ items to collect and use and over 200 monsters to deal with. If that's not enough you'll have oceans to cross, mountains to climb and castles to search.

CYBERKNIGHTS

CRL

Spec	£7.95cs	£14.95dk

Consider the name R.T.Smith – does it mean anything special to you? If you answered yes then chances are you're a Spectrum or Amstrad wargamer who has enjoyed some of this man's earlier works – *Vulcan, Arnhem, Desert Rats.* It might come as something of a surprise to you then to learn that he's turned his attention to arcade style games – at least for his next release. *Cyberknights* is a one or two-player combat/platform game which comes as two separate programs. The first program allows your character to battle against other gladiators, while the second lets you re-design your own robots before sending them into battle against either another player's robots or computer controlled baddies. *Cyberknights* should be available now.



STAR GOOSE

Logotron

Amiga	£19.95dk
Atari ST	£19.95dk
IBM PC	price undecided.

The Steve Cain and Kenny Everret duo (*Star Trek, Black Lamp*) team up again for this curiously titled space shoot-em-up. Climb in your 'goose' and fly through the tunnels and across the plains of Nom, blasting away. There's not much here to stretch the old grey matter, but it is good, clean homicidal fun, watch out for it soon.

THE FLINTSTONES

Grand Slam Entertainments

Amiga		£19.95dk
Atari ST		£19.95dk
Spec	£8.95cs	
C64/128	£9.95cs	£14.95dk
Amstrad	£8.95cs	£12.95dk
MSX	£8.95cs	

Barney, Fred, Wilma, Pebbles – they're all here in this gaming adventure of classic proportions. Fred's up to his neck in all sorts of trouble and it's up to you to sort it all out. The 16-bit versions should be available first with the 8-bit versions coming close behind.

Birds of a Feather

STARGLIDER II

Rainbird

Amiga	£24.95dk
Atari ST	£24.95dk

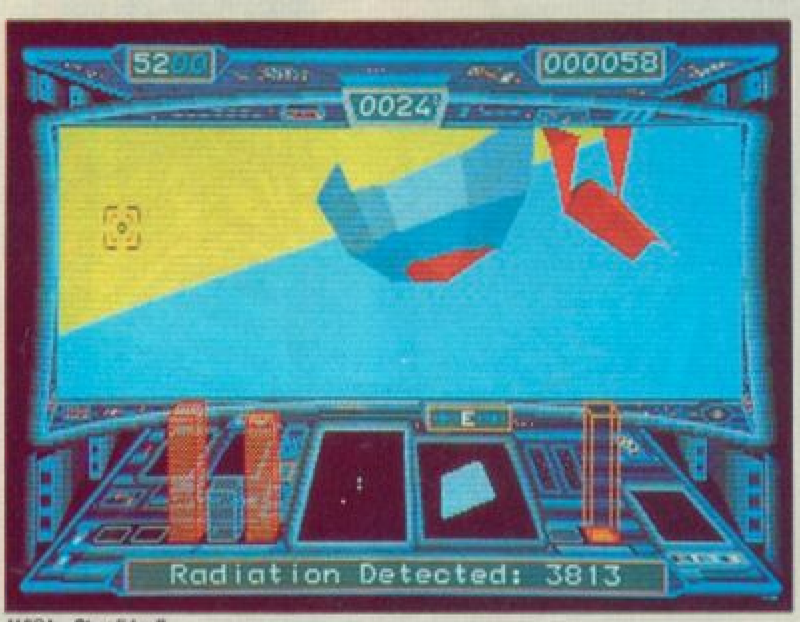
Having chased the Egron forces away from Novenia with a flea in their ear, Jaysan and Katra have volunteered (fools!) to infiltrate the Egron-dominated planet of Mira and annihilate the Egron forces once and for all – not to mention destroy their beam projector which is trained on Novenia. Even getting to Mira is going to prove extremely difficult, but you should be able to attempt the highly unlikely 'real soon now'. *Starglider II* is going to be the first game released to incorporate the Argonaut Disc Loading System – the same disc will run on both ST and Amiga machines.

RETURN TO GENESIS

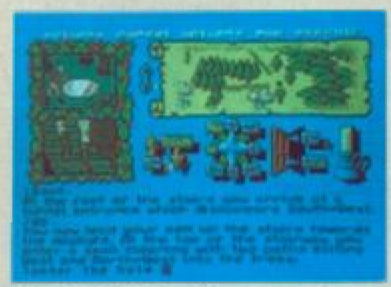
Firebird

Atari ST	19.95dk
Amiga	19.95dk

This is the latest game from the author of *Goldrunner* and *Karate Kid II* – Steve Bak. You're flying a craft over fantastic landscapes that are swarming with aliens. There are obstacles to hinder your progress that will require lots of skill to negotiate. The ST version should be here shortly with the Amiga version following shortly after.



AMIGA – *Starglider II*



ST – *Legend of the sword*

LEGEND OF THE SWORD

Rainbird

Atari ST	24.95dk

This new style of adventure game tells of the chronicles of Anar and of a magical sword and shield whose aura protected the inhabitants of Anar for many centuries. It's only because of an invasion by mutant humanoids under the command of the evil wizard Suzar, that King Darius has summoned you and five others to find the enchanted sword and shield. The game boasts over 300 individual cameo illustrations – which change according to the situation – loads of intelligent characters to interact with, and a highly flexible interpreter. *Legend of the Sword* should find it's way into your local stockist very soon.

1 | 2 | 50 | 99 | 100

TEST DRIVE

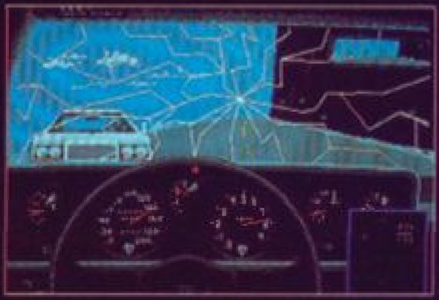
AMIGA

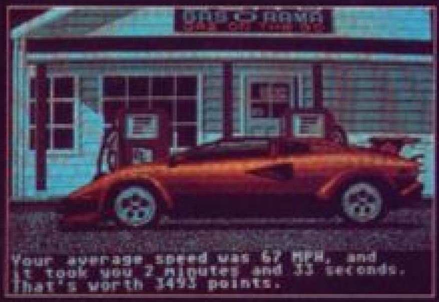
ATARI ST

C64 CASSETTE

C64 DISK

IBM

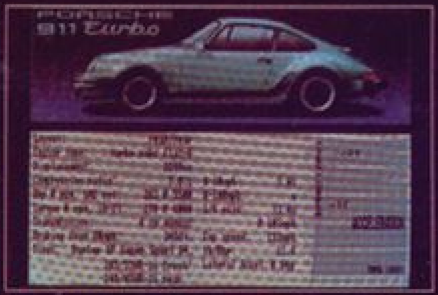


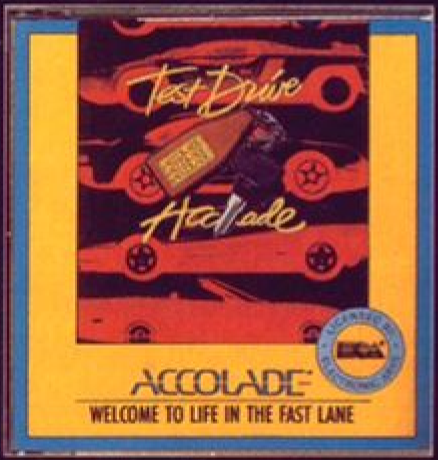


Your average speed was 67 MPH, and it took you 2 minutes and 33 seconds. That's worth 3493 points.

TEST DRIVE

Test Drive is different – a new standard of driving simulation game. You're probably thinking "that's what they all say". So don't listen to us. Read what Commodore User and Popular Computing Weekly said — "never have I encountered a game where the introductory screens make me want to play the game as much as this one". C.U. "…the graphics are out of this world. For any car enthusiast the game is essential. P.C.W.





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Zoom your way through a network of tunnels in your buggy avoiding the myriad of hazards that race to meet you, beware the Aliens and barriers that move around the circumference of the DUCT.

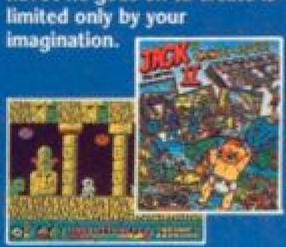
AUF WIEDERSEHEN MONTY
Lying low in Gibraltar, poor persecuted Monty Mole's whereabouts have been leaked to 'Intermole', who are in hot pursuit.

MASK
Join with the forces of MASK, skilfully commanded by Matt Trakker and combat the villainous VENOM in their quest for domination of the world.

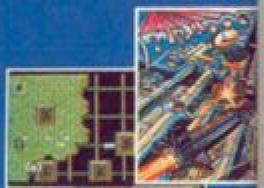
DEATH WISH 3
Modern day vigilante Paul Kersey wreaks his own form of revenge on the scum and filth that terrorise the streets of New York.

DEATH WISH 3

JACK THE NIPPER IN COCONUT CAPERS
Banished to Australia, our favourite little horror jumps plane to land in deepest, darkest jungleland. What havoc he goes on to create is limited only by your imagination.



BULLDOG
Blast your way through infinit
levels of high speed space
action, penetrating your
enemies outer defence syster
to reach and destroy the
POLON mothership.

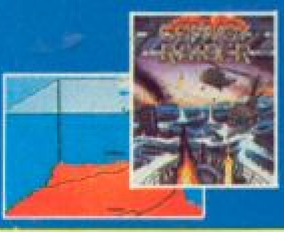


THE FINAL MATRIX
Brave Nimrod, sent on a dangerous and apparently endless mission to rescue other Bioptons imprisoned on the sinister Matrix prison network.

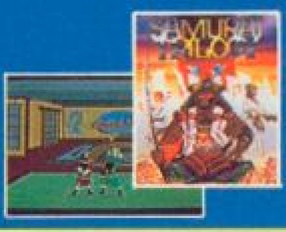
THING BOUNCES BACK
A quick hand and dogged determination are needed if you're to get anywhere with Thing, as Gremlin's springiest star bounces back in a new adventure.

BASIL THE GREAT MOUSE DETECTIVE
Will your powers of deduction be enough to enable Basil to rescue Dr Dawson from the villainous clutches of Professor Ratigan?

CONVOY RAIDER
The free world is in peril, the future of the country lies in your hands, frighteningly powerful weapons are at your disposal and important decisions must be made.



SAMURAI TRILOGY
In an age in which honour was revered, a class of warriors set themselves apart to dedicate their lives to a perfection in combat and discipline of mind that became a religion.



RE-BOUNDER
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the might of the meddling
overlord, to return to a happy
go-lucky life as a
B...B...Bounder.

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Screen shots from various formats.

WIN AN ATARI ST!

Has your ACE card come up trumps this month? There are 25 great prizes.

For everyone who received a free ACE card on the cover of last month's magazine, here's another great opportunity to win prizes.

Using the same program as last time, just type in the 25 new 4-letter codes printed on this page. If the program converts one of them into your personal number, you're a winner!

If you missed last month's ACE, you can still get hold of an ACE card – see the box for details.

LOOK AT THESE PRIZES!

ONE 1st PRIZE: *ATARI 520ST + COLOUR MONITOR*
The winning code: CIZW

FOUR 2nd PRIZES: *£50 of software – chosen from the ACE Special Offer pages*
The winning codes: BSVP • BUDS • CEFM • DFJZ

TEN 3rd PRIZES: *£25 of software – chosen from the ACE Special Offer pages*
The winning codes: ACFI • BOQB • EMII • ARGH • ATIB • AYNC • EDTV • APAD • BUPO • COJS

TEN 4th PRIZES: *A year's free subscription to ACE magazine*
The winning codes: BIWT • DVLW • AFGD • BWOW • CUCG • AIOL • ARER • CRZL • ATNO • EFXD

HOW TO CLAIM A PRIZE

If you are one of the winners, you may claim your prize simply by posting us your ACE card together with a note saying which prize you are claiming (and from which issue of ACE).

If your prize is for software, list carefully the software you would like from the selection printed in the ACE Reader Offer pages (94 – 95).

Assuming your claim is valid, we will forward your prize and return your card within 28 days (probably much sooner).

Post to: ACE CARD PRIZE CLAIM, 4 Queen Street, Bath BA1 1EJ ***Closing date for claims May 12th, 1988***

HOW TO OBTAIN AN ACE CARD

If you missed the April issue of ACE, you may obtain an ACE card free of charge by sending us a stamped self-addressed envelope together with a signed statement saying that neither you nor anyone else in your household already owns an ACE card. Apply to:
ACE CARD REQUEST, 4 Queen St, Bath BA1 1EJ
(This offer valid while stocks last).

THE DECODER PROGRAM

This short program listing will DECODE the 4-letter codes printed below next to the prizes. It turns each code into a five-digit number such as the one printed on your ACE card. All you have to do is type-in the program using the instructions for your computer printed below.

Then RUN the program. It will ask you to input each of the prize codes in turn and will then reveal on screen the winning numbers. If your number comes up, YOU CAN IMMEDIATELY CLAIM YOUR PRIZE!

If you are unable to get the program to work, a list of the winning numbers, correctly decoded, may be obtained by sending a stamped addressed envelope to:
ACE May winners list, 4 Queen Street, Bath BA1 1EJ

C64, CPC, ST, AMIGA version

```
10 FOR A=1 TO 25:INPUT "Code";B$
20 B=0:FOR C=1 TO 4:B=B*26
30 D=ASC(MID$(B$,C,1))
40 IF D>90 THEN D=D-32
50 B=B+D-65:NEXT C:PRINT "Winning Number is";B:NEXT A
```

SPECTRUM version

```
10 FOR A=1 TO 25:INPUT "Code";B$
20 LET B=0:FOR C=1 TO 4:LET B=B*26
30 LET D=CODE B$(C TO)
40 IF D>90 THEN LET D=D-32
50 LET B=B+D-65:NEXT C:PRINT "Winning Number is";B:NEXT A
```

TYPING IN THE PROGRAM

SPECTRUM

48K: Power on, and type the Spectrum listing in as shown, pressing ENTER at the end of each line. To get the word CODE in line 30, hold down caps shift and symbol shift keys together and press the letter I key. When you've typed all five lines in correctly, press R (for RUN) followed by ENTER. Now type in the codes one at a time, pressing ENTER after each one: the program will stop after you've typed in all 25 codes.

128K: Select 128K BASIC mode from the start-up menu and type in the Spectrum listing as shown, hitting ENTER at the end of each line. Type RUN, hit the ENTER key again and type the codes in as for the 48K Spectrum above.

C64/128

Type the listing in as shown, hitting the RETURN key at the end of each line. Type RUN (Don't use the RUN/STOP key), hit RETURN and then type the codes in one after the other.

AMSTRAD CPC

Type the listing in as shown, hitting the RETURN key (6128) or the larger of the two ENTER keys (464 or 664) at the end of each line. Type RUN and hit RETURN or the large ENTER key again - don't use CONTROL and the small ENTER key here - and type the codes in one after the other.

ATARI ST

Put the LANGUAGE disk in the drive and switch the ST on. Double-click first on the drive A icon and then on the BASIC.PRG icon to boot Basic. Type EDIT and press the RETURN key. Now type the listing in, hitting RETURN after each line, and press the F10 key when you've typed all five lines in. Now type RUN, press RETURN again, and type the codes in one at a time.

AMIGA

Switch on, put your 'Workbench' disk into the drive and wait for the desktop to appear. Now put your 'Amiga Extras' disk in the drive, double-click on the EXTRAS icon and then double-click on the AMIGA BASIC icon. Type the listing in as shown, hitting RETURN after each line, and then click on the BASIC (rather than the LISTING) window. Type RUN, hit RETURN and then type the codes in one at a time.

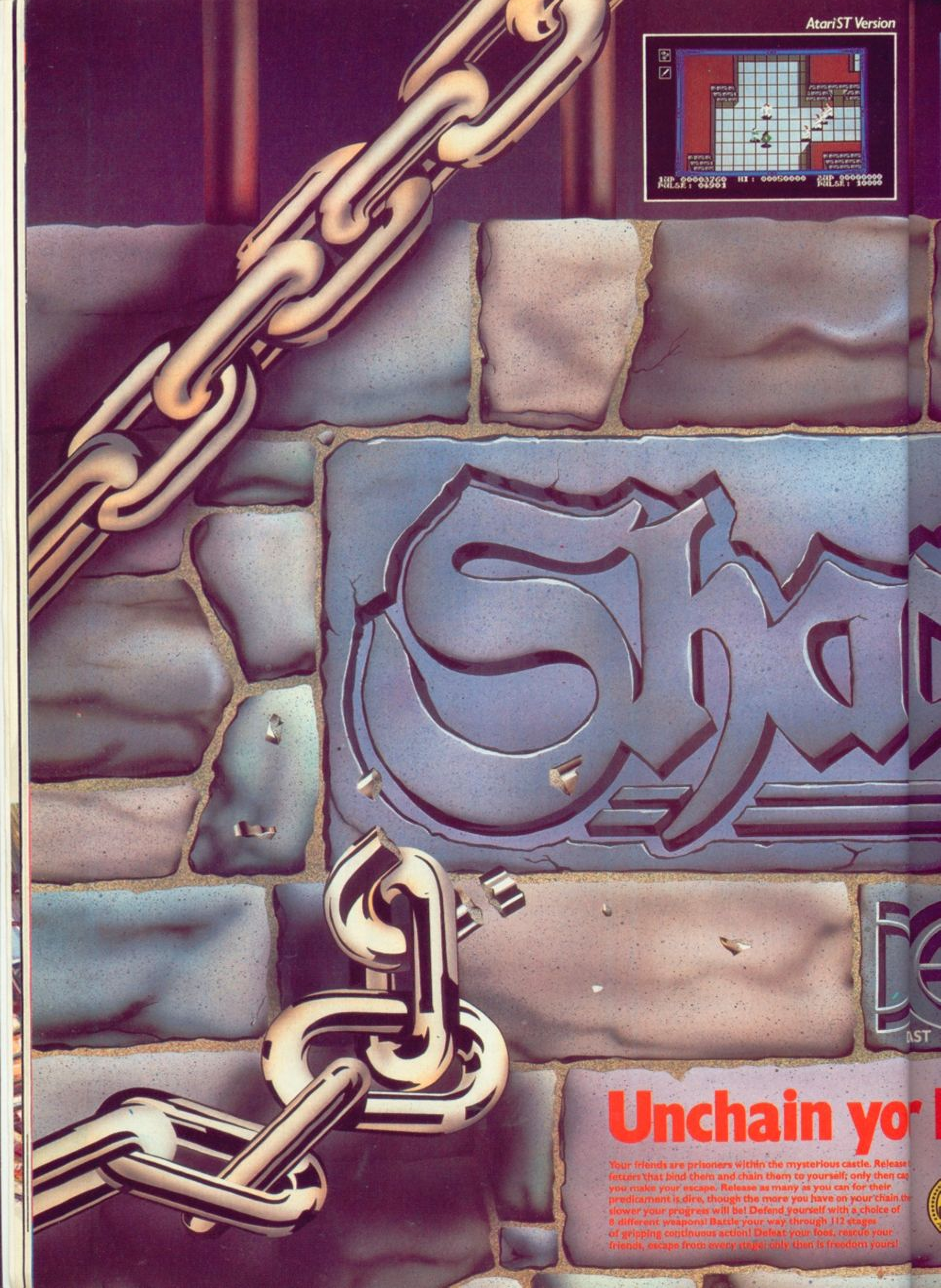
OTHER MACHINES

The 'C64, CPC etc' listing is standard MicroSoft Basic, so it ought to work on most micros. If you can't get it to work on yours, write to us for a list of winners — details of this are printed above.

RULES

1.This promotion is open to everyone with the exception of employees of Future Publishing Ltd and anyone involved in the distribution or retailing of Advanced Computer Entertainment magazine.
2.Ownership of the ACE card is limited to one per household.
3.Each four-letter code printed in the magazine corresponds to a winning 5-digit number on one of the ACE cards.
4.The codes must be correctly decoded using the program printed each month in this magazine.
5.Claims for prizes must be received by first post on the closing date at the latest. The value of any unclaimed prizes will be carried forward to future issues.
6.If, due to a production error, more than one person claims a single prize, the publishers reserve the right to divide the prize between the claimants.
7.*In the event of any dispute, the decision of the publishers is final.*

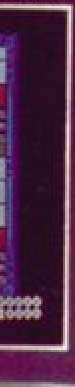
Atari ST Version


1UP 00003700 HI : 00050000 2UP 00000000
PULSE : 04901 PULSE : 10000
Sha
AST

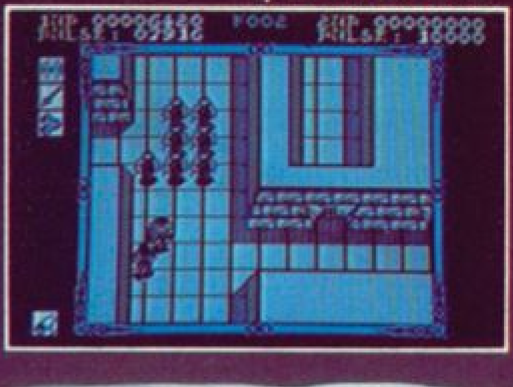
Unchain yo

Your friends are prisoners within the mysterious castle. Release
fetters that bind them and chain them to yourself; only then ca
you make your escape. Release as many as you can for their
predicament is dire, though the more you have on your chain th
slower your progress will be! Defend yourself with a choice of
8 different weapons! Battle your way through 112 stages
of gripping continuous action! Defeat your foes, rescue your
friends, escape from every stage: only then is freedom yours!

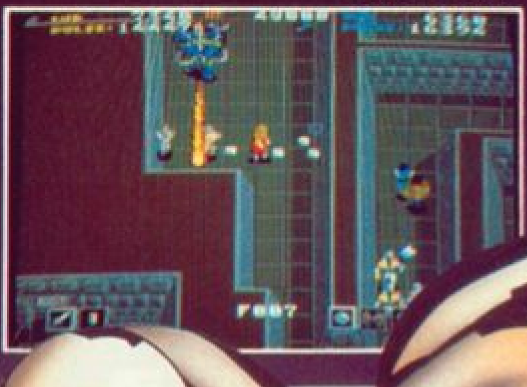
Version

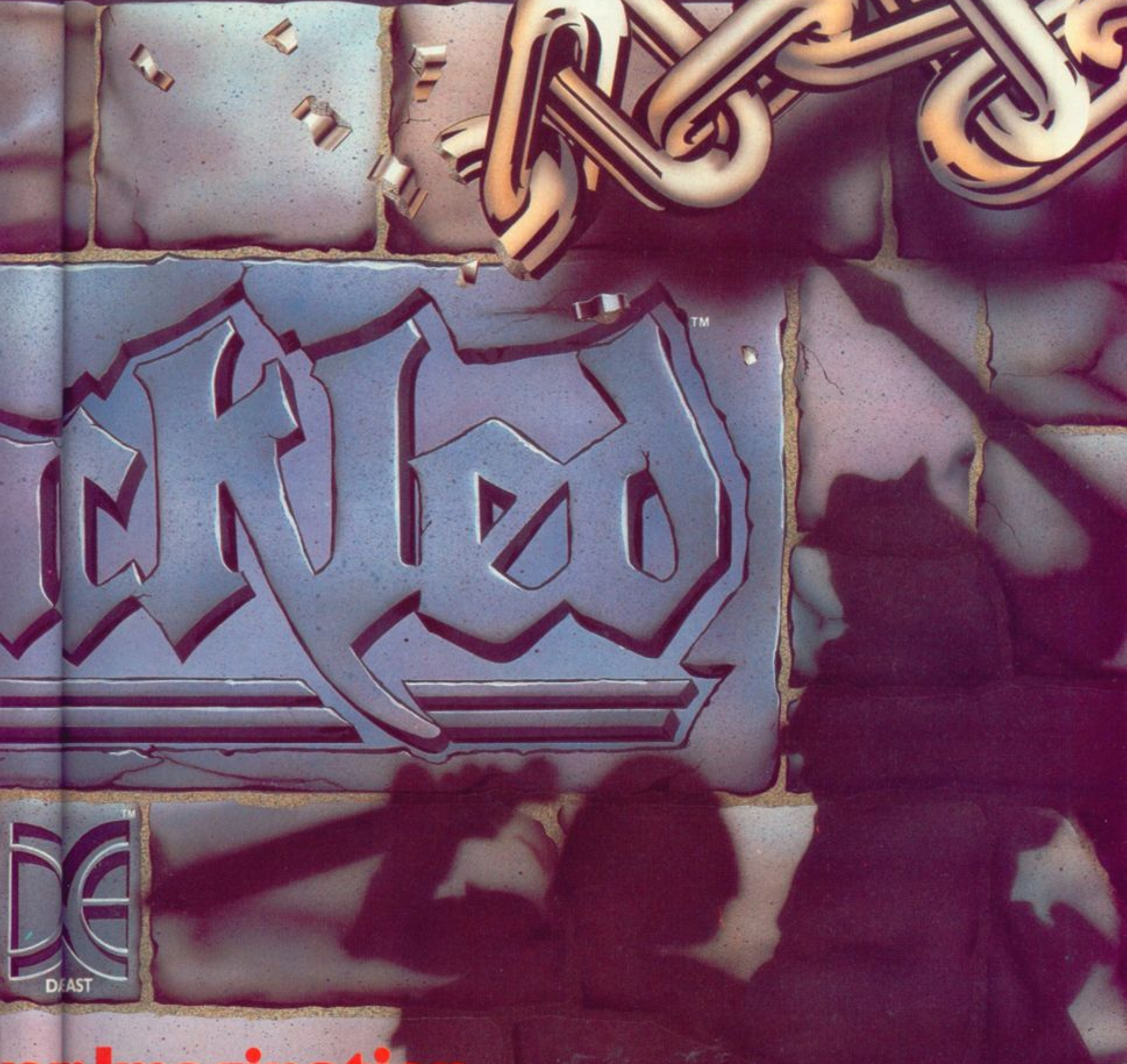


Spectrum 48k Version



Arcade Version





yor Imagination

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your
yours!

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CBM 64/128·
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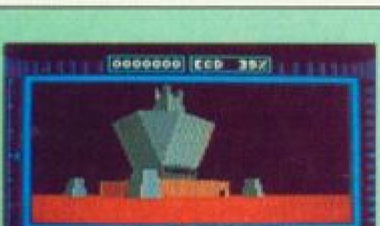
UNDER STARTER'S ORDERS

The tension's mounting as these thoroughbreds prepare to get under way. Will the favourites turn out to be non-starters? If you're smart you'll check out their form and starting prices in a future issue of ACE – you wouldn't want to lose your shirt on a bob-tailed nag, now would you?

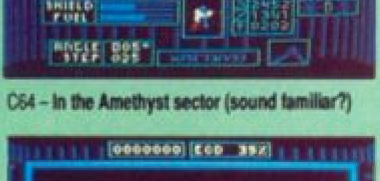
DARK SIDE

Incentive

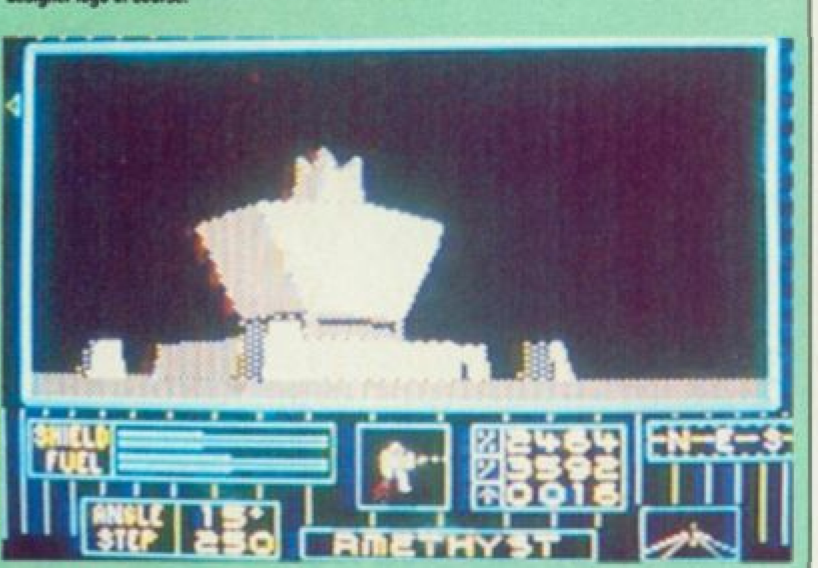
To produce a follow up to such an innovative and enthralling game as *Driller* – ACE Rated 962 (PC Version) would be regarded by many as a tall order. Incentive reckon they've got the answer though with *Dark Side*. The game incorporates the 3-D landscaping technique – Freescape, developed for *Driller* and is set on Evath's other moon Tricuspid. Your objective is to destroy the giant weapon Zephyr One which the Ketars are planning to destroy Evath with. Watch out for the definitive ACE review in the near future.



C64 – In the Amethyst sector (sound familiar?)



C64 – Your jet suit comes complete with Quad laser and protective plasma band – and designer logo of course.

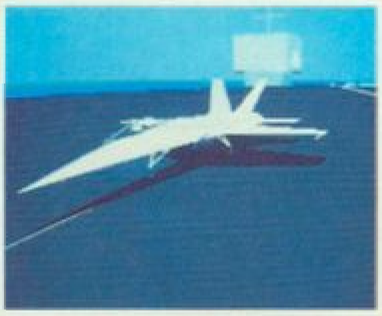


SPECTRUM – The Speccy's Amethyst sector.

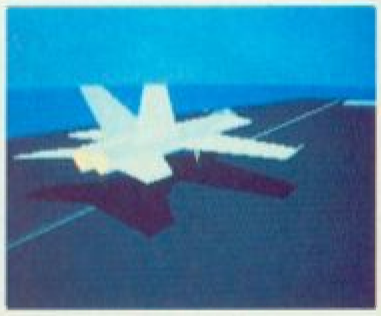
INTERCEPTOR

Electronic arts.

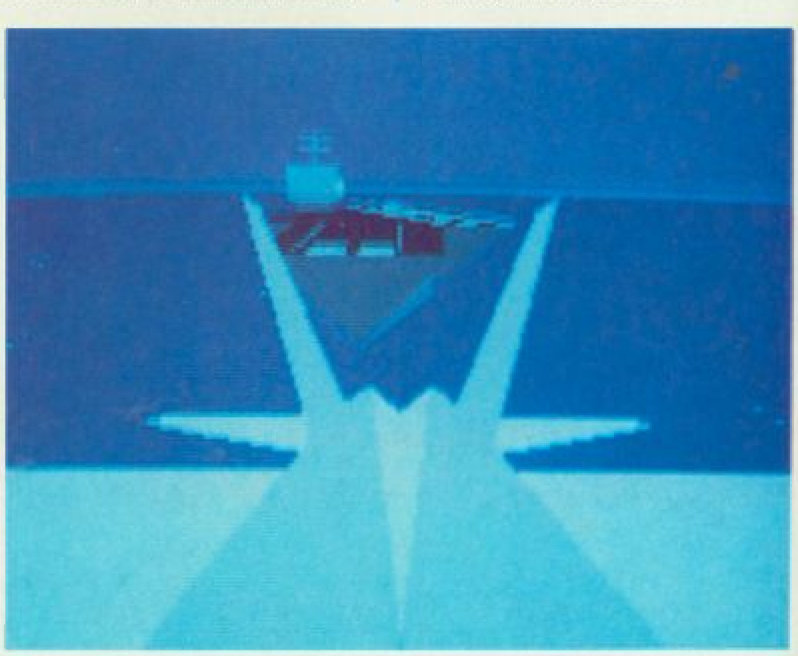
This action-packed flight sim for the Amiga gives the player six missions to complete in and around the San Francisco Bay area. You've got two planes to choose between for the missions – an F18 Hornet and an F16 Falcon, both featuring digitised engine and weapon sounds. We're hoping to review this one next month – so don't miss out!



Your F18 is out on the aircraft carrier's runway.



We have ignition! Prepare to take off.

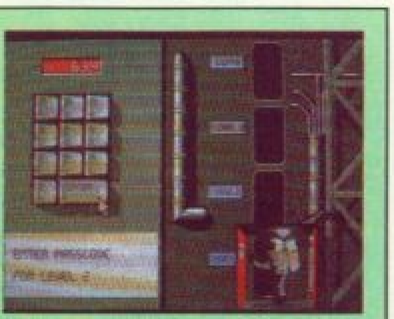


Tearing out over the sea. This is a rear view of your plane and the aircraft carrier.

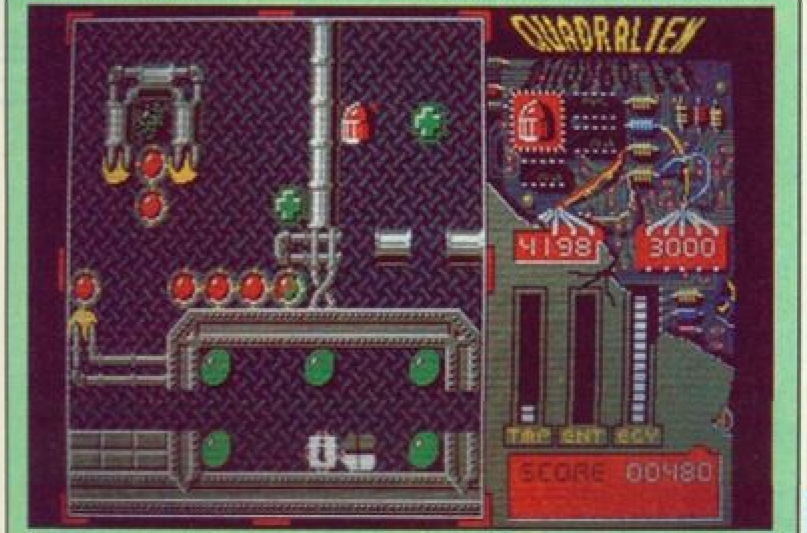
QUADRALIEN

Logotron

This exploration/puzzle game for the ST is set in the 21st century and the player is in charge of six remote controlled robots. The idea is to destroy the alien who's to be found at the core of a large radioactive installation. You have to enter the installation on the lowest level and clear the level of all radioactive contamination before you can access the elevator and proceed to the next level. Clear enough levels and you'll arrive at the core.


ENTER PASSCODE
FOR LEVEL 2

If this is the right code you can make a start on level two.

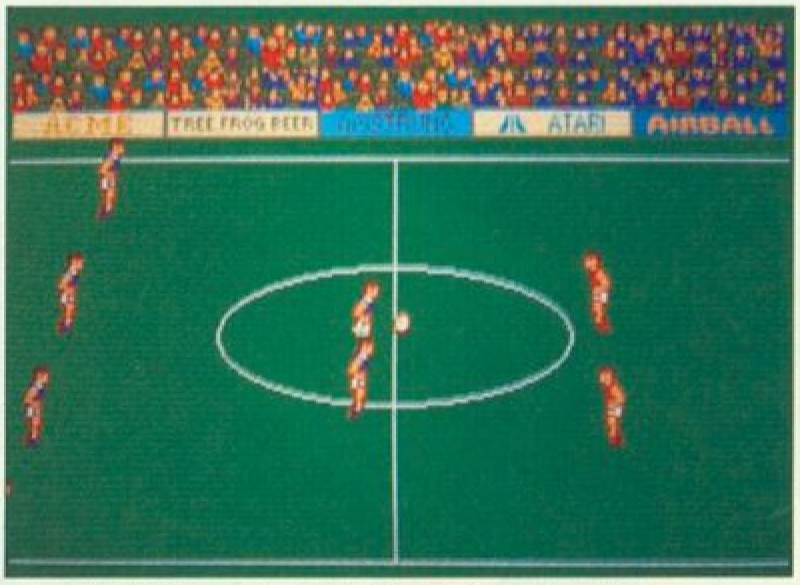

QUADRALIEN
4198
3000
TMP ENT ECY
SCORE 00480

On level one – you're controlling the robot called SPUD at the moment.

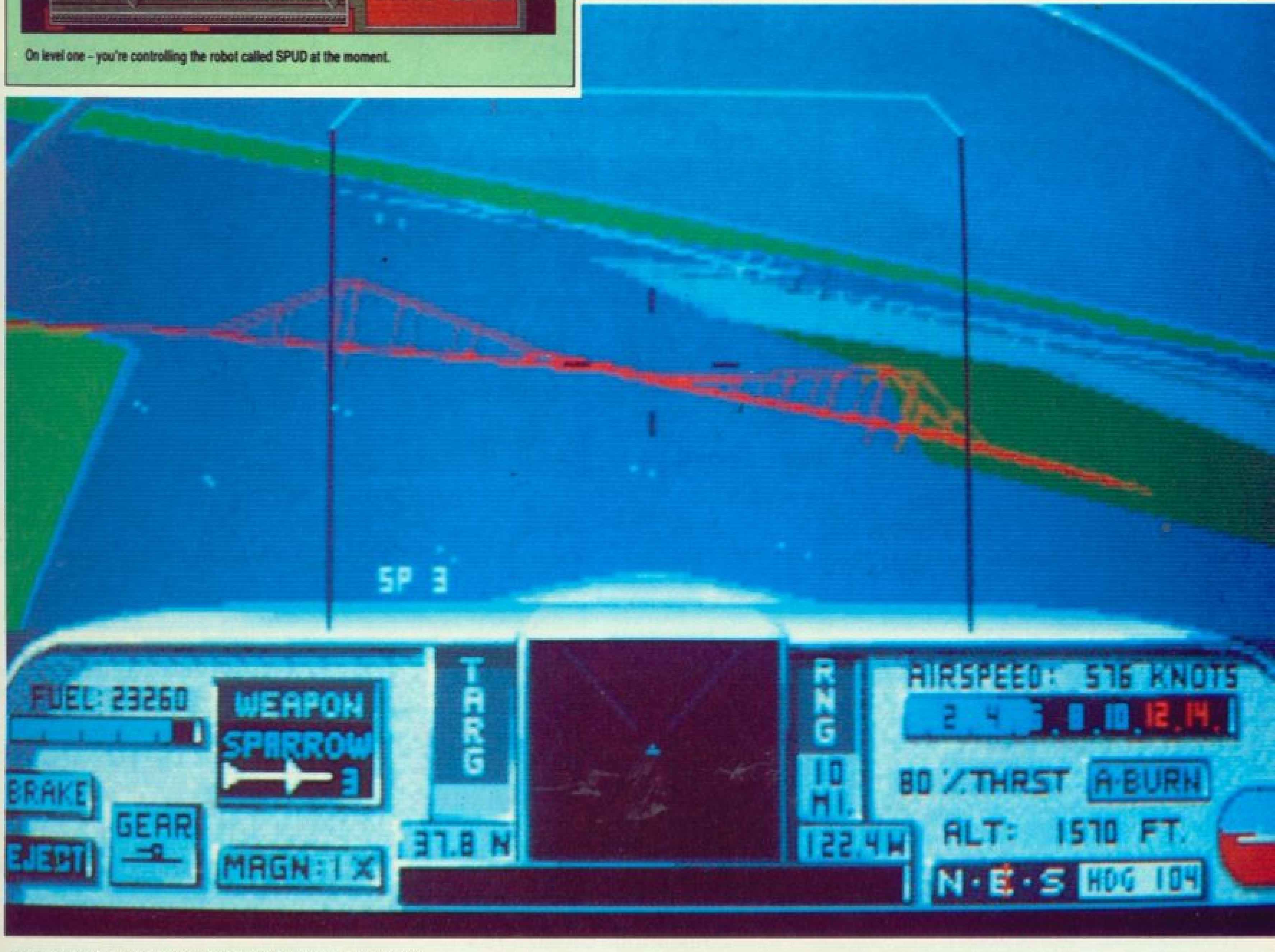
INTERNATIONAL SOCCER

Microdeal

There are a couple of wonderful football games already available for the 8-bit machines, but they're no good to you if you own an ST or Amiga. Microdeal to the rescue! This 16 bit soccer game gives the player the chance to play under floodlights, or even in the wind and rain. Reviews will be kicking off in next month's ACE – so grab yourself a season ticket and make sure you never miss a match.


ACME
TREE FROG BEER
ATARI
AIRBALL

Ready for kick off – let's hope the fans don't invade the pitch at the end of 90 minutes.


SP 3
FUEL: 23260
WEAPON
SPARROW
3
BRAKE
EJECT
GEAR
MAGN: 1 X
TARG
37.8 N
RNG
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MI.
122.4 W
AIRSPEED: 576 KNOTS
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A-BURN
ALT: 1570 FT.
N·E·S
HDG 104

The Golden Gate Bridge. You wouldn't blow it up with a Sparrow – would you?

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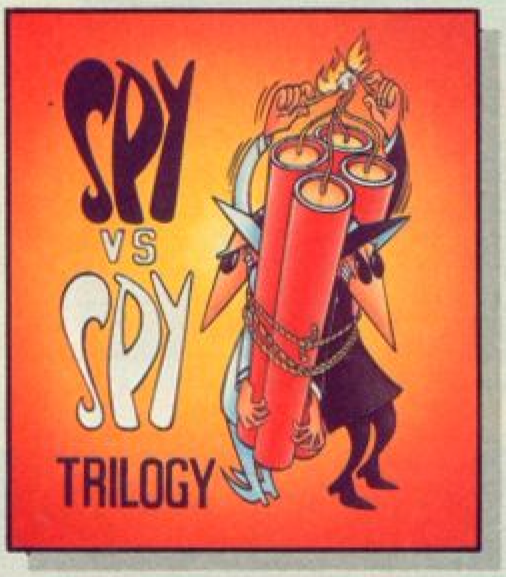
NOW PLAYING AT A STORE NEAR YOU.

1



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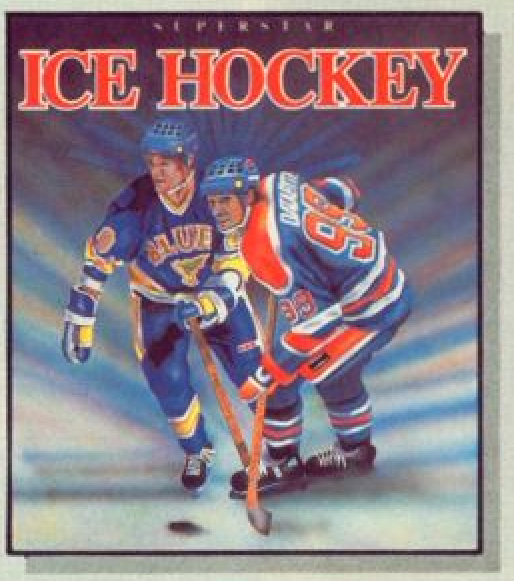

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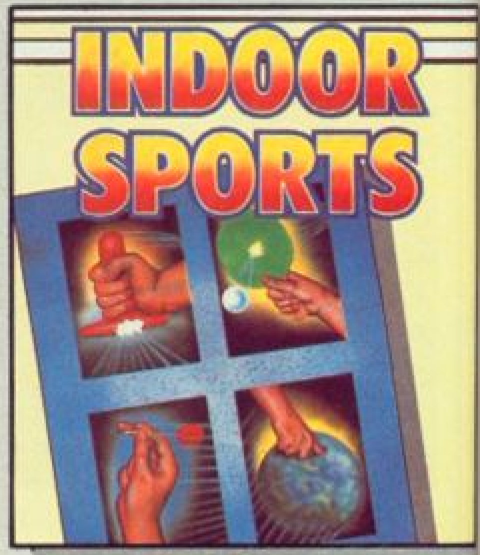

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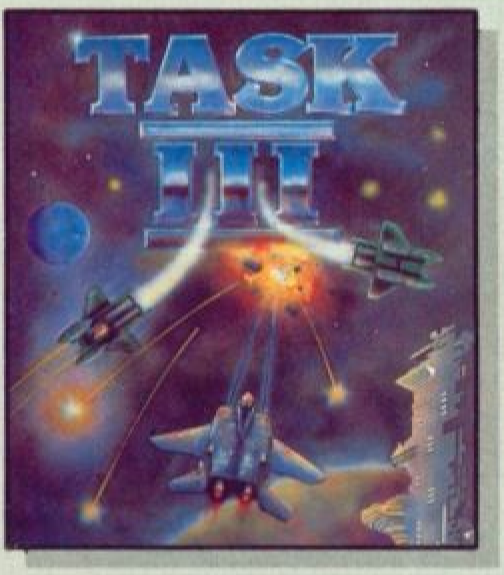

COMING SOON

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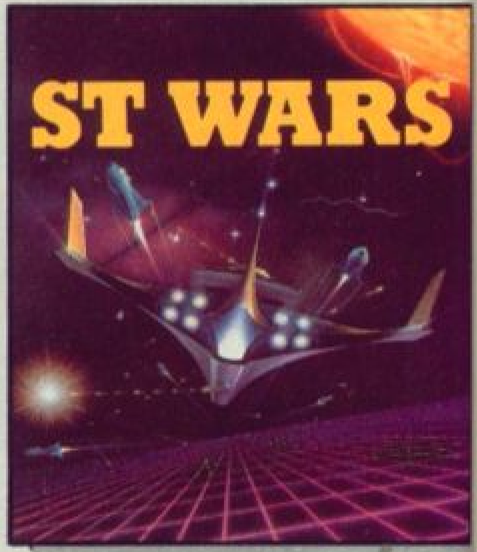
5



1 SPY VS SPY TRILOGY

What the reviewers say:
Spy Vs Spy Vol 1 – voted the best two player game ever designed.
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Vol 3 Arctic Antics – A must for fans of the original Spy Vs Spy games.

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Commodore 64/128 cassette: £9.95
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2 SUPERSTAR ICE HOCKEY
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Note: C64 version does not include ping pon

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Atari XL/XE disk £14.95
Amiga £24.95 Atari ST £24.95
IBM-PC +Compatibles £24.95
IBM-PC 3½ inch £24.95

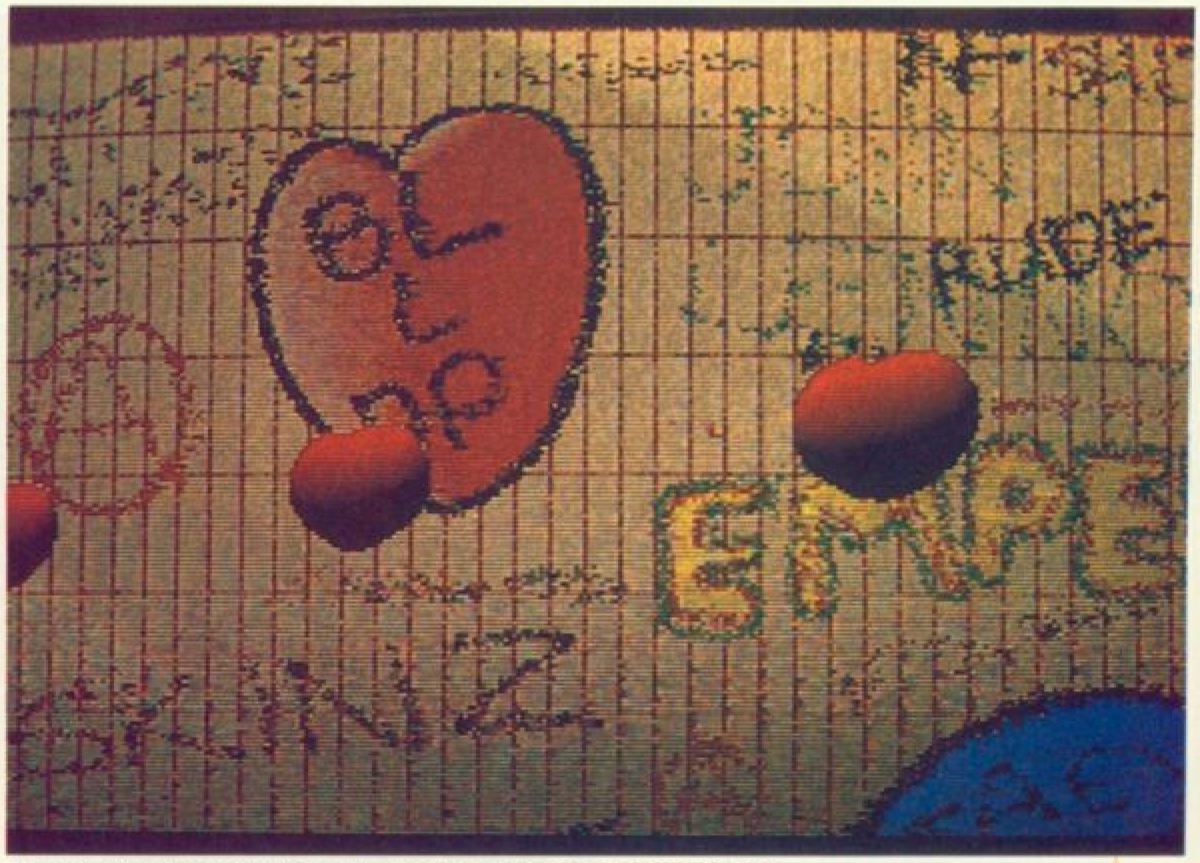
4 TASK III
"It really has to be played to be believed, I'm hooked" – *Commodore Use*
Commodore 64/128 Cass £9.95 disk £14.95

5 ST WARS
"If you liked Starglider you'll love this game it plays better and it's much more fun to play, overall its a much better game"
Atari ST £24.95

GETTING ANIMATED

Computer graphics on the home micro have become much more sophisticated over the past few years – but still basically static and in 2D.

Now, however, there's a new breed of animating software available for the 16-bit machines, and a new world has opened up for the graphics enthusiast. Brian Larkman looks at some of the latest techniques and packages.



These hearts bounce from right to left across the screen with smooth precision. Aaah, aren't they cute?

Computer animation can take any one of a number of forms, most of which rely on techniques quite similar to conventional animation. Colour switching, sprites and blitter objects (bobs) are all basically processes giving the impression of movement in the picture plane (i.e. across the face of the monitor). They're widely used in almost all current entertainment software. A number of existing programs allow easy manipulation of sequences; *Film Director* and *Aegis Animator* for the ST and *Deluxe Video* and *Aegis Animator* for the Amiga are perhaps the best known. These are really just more powerful versions of bit-mapped 2D art and animation programs already available for 8-bit machines.

The more advanced software now appearing uses a very different set of techniques to give an impression of movement much closer to reality. The technique used is called *Solid Modelling*. This means that you can construct a computer simulation of any solid shape, decide on colours, surface textures and pattern, position your viewpoint and light sources, then render all of it on the computer screen. Once a scene is rendered it is a simple matter to move objects, viewpoints or lighting and render again, eventually producing a series of frames that can be used to produce the effect of animation.

These techniques can be broken down into three main processes; object editing, motion editing and rendering. All of the software under review uses some combination of these to produce their end result, though some of the packages are much more elegant and simple about it than others.

OBJECT EDITING

The heart of any process aiming to simulate the real and solid world should be the object editor, where the building blocks are constructed, formed and welded together.

The computer's view of the world is a series of points (vertices) where lines (edges) meet to define enclosed flat surfaces (faces). Joined together in various ways, these basic elements can form 'primitive' solids of varying complexity from three-sided pyramids to cubes to multiple sided pseudo-spheres. These 'primitive' solids are the computer's building blocks. A range of them – including rings, wedges and cones – is normally available to the object editor and usually constructed directly by the software from stored alogrithms defining them when requested.

Normally, the working view the computer provides of the scene is constructed of lines – a 'wire-frame' view. The solid model, with all hidden lines removed, takes some time to compute, so for normal working the wire-frame is sufficient. However, even the wire-frame must be visualised in some way that makes editing and composition of the object easy and straightforward.

The conventional approach – used by designers and architects – is to provide four viewpoints or elevations: a front elevation, an end elevation, a plan – facing, say, north, east and down respectively – and an orthographic (*Knight Lore*) view that can be varied to suit the circumstances to show the overall effect of the other three. Usually, this fourth view is for observation only. This approach is taken by both *Cyber Studio* and *SculptAnimate* (though *Cyber* can provide all four at once). The great advantage is that any point can be defined accurately using at least two of the views – though the profusion of images can be confusing initially.

An alternative is to provide a single, variable viewpoint of the whole scene – either a conventional elevation or an orthographic view. Less confusing, but not so easy to manipulate individual points with. A single viewpoint is therefore better suited to a method that only enters ready made objects and rarely deals with individual points. This is the case with *Forms in Flight*.

As well as the 'primitive' shapes, an object editor needs to provide other tools to manipulate objects and create a variety of shapes – including SPIN, to produce 'wine-glass' shapes, EXTRUDE to drag 2D shapes such as letters into 3D, and JOIN to 'glue' simple shapes together. Once formed it's necessary to move objects about the screen, duplicate them, change their scale or rotate them. For this the editor should posssess a series of functions both easy to access and simple to operate. Both the Amiga and ST can use 'gadgets' or 'icons on screen and drop down menus, hidden at the top. A combination of these two methods seems to be the best way to manipulate objects within the editor. In this respect, only *Cyber Studio* (ST) and *SculptAnimate* (Amiga) can be used in an intuitive way.

SCENE/MOTION EDITOR

Once objects comprising a scene have been assembled, their relative motion through the animation must be choreographed. This process is the make or break of computer animation, and if a computer is to make a task easier and quicker then the actual process of using the machine should be easy also.

Like conventional animation, computer animation produces a series of images or frames that vary from one to another in a sequential way. The simplest way to achieve this is to set up a scene, render it, change it slightly, then render the next scene until the animation is complete. This can be a very tedious process, and the producers of an animation want tools that make it more automatic and they want them to be easy to use.

Several methods can automate the procedure – using a global scene, key-frame animation, motion paths, object/motion or 'tree' hierarchies etc... Some of the software reviewed has some of these facilities. Only *SculptAnimate* has all of them in an easy-to-use form. Most of the other packages are either not very versatile for animation or are complicated and difficult to use.

A global scene is one, preferably composed in the object editor, that contains ALL the information required to produce a particular animation. It should include the starting position of all the objects, the observer, cameras and lights. For each moving object its path or at least its finishing point should be defined. If the camera or lights move, the extent of that movement should also be determined. Ideally, all this information should be visible in the edit window using 'motion paths' not shown in the final render.

If an object transforms during an animation – a rubber ball compressing as it strikes a surface perhaps – this information cannot be contained in a global scene. Instead key-frame animation and 'inbetweening' can be used. At 'key' places during the animation – when the ball is at maximum compression

ILFOCHROME 100
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Various stages of Cokeman rotating through 90 degrees. Simple when you know how!

for instance – a scene is composed and saved to disk. The first and last scenes might also be 'key' frames. Once these have been defined the computer can automatically interpolate the frames between.

Thus frame 1 might be of the ball at the top of its bounce, frame 10 at the bottom when it is most compressed and frame 20 of the ball back at the top. The computer would compose each of the scenes for frames 2 - 9 with the ball gradually becoming more and more compressed. This is not actually what is required, so another 'key-frame' is needed at perhaps frame 6 showing the ball uncompressed but just touching the surface that will compress it. Frames 7, 8 and 9 would then be the 'inbetween' stages before full compression for scene 10.

Motion hierarchies are family trees of the parts of an object. Each part is named separately so that a motion path can be attached to it. Thus a finger can bend independently but must follow a moving hand, which must in its turn remain joined to a moving arm.

RENDERING

Once the computer simulation of the scene has been constructed it can be rendered. This involves drawing all the objects in the first frame from the chosen viewpoint, illuminated correctly and using the maximum number of colours. All the packages tested except *Animator Apprentice* and the Ray-Tracing modes of *SculptAnimate* did this by examining each face of each object in relation to the light source(s), deciding which shade of its pre-determined colour it should be showing, then drawing that face. Each started the drawing at the faces furthest from the viewpoint so that the last faces drawn would obscure earlier ones – a quick and effective form of hidden line removal.

Animator Apprentice is unique in home computer animation in that it uses a 'surface mapping' technique to project any specially prepared flat artwork (including HAM images) onto a contoured surface, meaning that a rounded object like a Coke Can can be shown in full colour 3D. *SculptAnimate* uses another common technique from the computer graphics industry called 'ray-tracing'. The colour of each pixel on-screen is calculated by tracing a 'ray' back into the simulation 'model'. If a solid surface is reached the colour, lighting and surface texture of that spot are used to calculate the value of the pixel. Adjoining flat faces are made to look curved with a 'smoothing algorithm'.

Colours on-screen

The Atari ST is normally capable of showing only 16 colours on-screen at once, so to allow for a range of shades across the surface, each object can only have a limited number of colours, usually 2 or 3. The Amiga can show 32 colours at once in its normal lo-res mode, and allowing for a range of 6 or 7 shades across a surface this still only gives a basic four colours for any object. Nevertheless, some remarkable results can be achieved with both the ST and Amiga in these modes and most animation software available is limited to this small pallete.

Most Amiga users are now aware that in Hold-and-Modify mode all 4000 colours can be placed on-screen. Rendering a surface using all these colours would allow smooth shading and full photographic colouration of a scene. *Animator Apprentice* and *SculptAnimate* both take advantage of this mode in very different ways to provide full colour images.

Delta Compression

Animation uses up vast amounts of memory, both within the CPU and on disk. To animate 1 second requires approximately 25 images, which would occupy all of one disk or almost 1Mb of memory. If the animation is recorded to film or video this is not a problem; if it is to be played back in real time (RAM animation) sufficient information must be stored in RAM for several seconds' worth of frames to be reconstituted quickly enough for smooth animation. All 3D animation packages use Delta Compression, which involves recording the first frame in full followed by just the parts of the image that change in the subsequent frames. This allows more frames to be stored in RAM and for them to be displayed very quickly.

A new version of *Forms in Flight* due to appear soon should also use HAM, though in what form is not yet certain. *Quantum Paint* (from Eidersoft) has shown that it is also possible to provide 4000 colours on the ST. The technical problems may prove insurmountable but it seems at least possible that the ST could also be made to provide full colour. True ST 'ray-tracing' would then be possible.

FORMS IN FLIGHT

Micro Magic

£60 – available from the Amiga Centre, Scotland

Had this package appeared in this country a year ago it would have been hailed as a masterpiece. As it stands it sticks out little from the current crop of animation packages, partly because of the lack of promotion and partly due to the lack-lustre and boring manual, which doesn't give the reader a clear idea of the range of facilities available. Nevertheless, it is capable of a number of excellent feats and is in some ways easier for the novice to comprehend. The use of one view at a time on a clear screen may frustrate the experienced, but it is straightforward. The similar-looking pull-down menus offer the greatest limitation in use – some 'on-screen' gadgets or icons and a bit more colour in the menus would have made the interface much easier to use. Overall, the object editing tools are adequate.

Global animation is accomplished for each object by selecting it, then using menus to define the movement required during a particular block of frames. A hierarchy of names can be established to ensure that '...fingers follow hand follows arm...'. In other words, groups of objects can be joined and moved either together or separately. Even the 'Camera' can be attached to this 'motion hierarchy' to produce pan and zoom. Key-frame animation and transformation of objects does not seem to be possible.

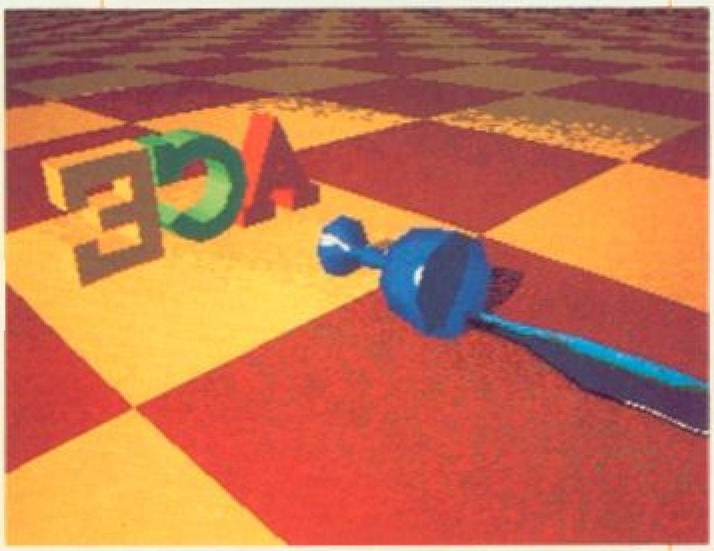
2, 4, 8, 16 or 32 colours can be used for rendering the final images, though some problems are caused if the minimum 1Mb system is used. Depending on the complexity of the scene, rendering can take from a few minutes to several hours. Each frame is delta compressed so one disk can hold quite a large animation. The two major complaints about rendering are that frames cannot be saved as IFF files for use in other programs and, conversely, pictures from other paint programs cannot be used as backgrounds.

ANIMATOR APPRENTICE

Hashnique

£195 – available from the Amiga Centre, Scotland

By far the quirkiest of the current crop of packages. Its author, Martin Heath, describes it as an 'organic animator', because it's especially good with organic objects such as humans, plants and animals rather than the usual smooth globes, glossy surfaces and geometric shapes. A flavour of the method used can only be gained by trying it out – difficult because the main program is expensive and the manual is rather disorganised and difficult to use. There is a simpler (and cheaper) version – ***Animator Junior*** (£52).



It shouldn't take long to have the ACE logo spinning round the right way – with a little patience and know-how.

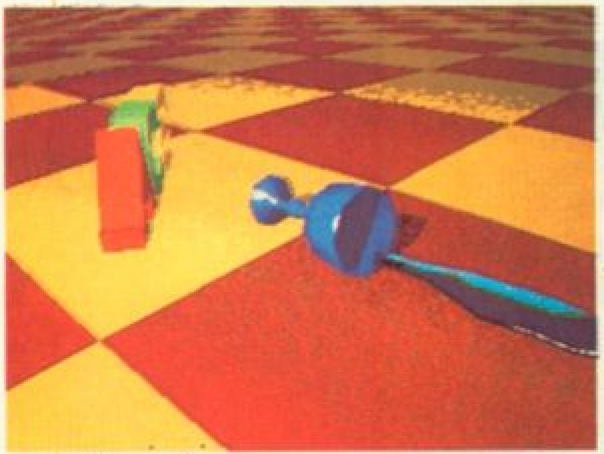
The technique used is surface mapping. The front, side, top and bottom views of each object are first drawn using a digitiser or drawing package (even HAM drawings). An object can be a limb, finger, flower, anything – though complex limbs are more mobile if broken down into parts. Each surface pattern – skin, feathers, bark, etc – is projected onto the smooth underlying surface. The resulting object can be choreographed with all the other parts in much the same way that other packages move objects using a heirarchy of names.

Like *VideoScape*, *Animator Apprentice* also uses individual 'module programs' – a fresh program is started for each stage of the animation. Here, the system seems to work reasonably well, though it's still not a very elegant solution to the problem. Objects are

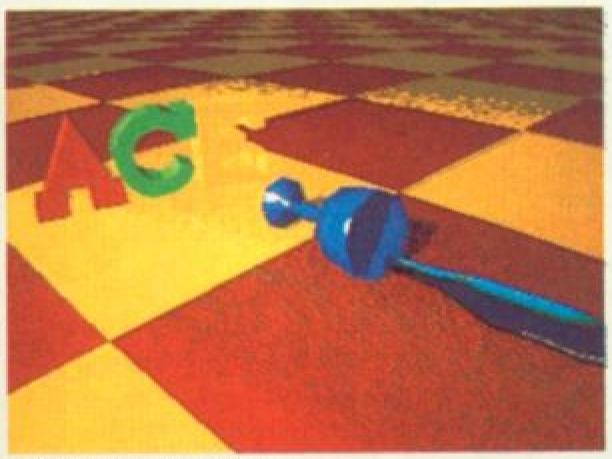
The logo starts to spin

edited in the Sculpt section then the various parts are put together as 'stick figure' characters. The local and global movements each character can undertake are then set using Motion and Director, the action previewed using Rehearsal, then the full animation rendered with Record. The result can be viewed with the Display program. Backgrounds can only be included using a genlock.

Overall, the system seems to work reasonably well, though to get good, consistent results will take practice. For flowing animation of complex, textural forms in 3D this is probably the only package of its type in the world. Developed to better use the Amiga's system of gadgets and windows, it would be superb. At present it is rather quirky.



Almost round now...



Here we are, around the right way.

VIDEOSCAPE 3D

Aegis

£119 – available from Precision Software.

Some of the first and best 3D animation demos for the Amiga were produced by Allen Hastings using software he had written, now available as *VideoScape 3D* – currently amongst the best known package for the very reasons that *Forms in Flight* is not, ie good presentation and packaging. While it is certainly true that *Videoscape* can produce excellent animations, it's not an easy or versatile package. User friendly it is not. Designed in a modular system supposedly easy to add more facilities to later, the system seems confusingly ragged and bitty, especially in the initial, object editing phase. Objects are created in one of three programs that hark back to MS DOS or BBC packages of three years ago; simple lists of choices with little or no feedback. For any complex objects the only method available is by creating in the correct order (clockwise from their visible side), an impossible task for the novice.

Motion and transformation of objects are both possible using key-frames and inbetweening, but once again the motion files must be ascii text files; very laborious. Foreground and background pictures can be added providing they are drawn using *Videoscape*'s standard 32-colour pallete. Frames are saved in Delta compressed form.

Overall, *Videoscape 3D* is intended for the advanced user, in whose hands many fine animations have been produced. To get the best out of the package takes many hours of hard work and tedious list writing especially in the object editing department. The manual is reasonable but it has an uphill struggle against the complexity of the software.

CYBER STUDIO

Antic

£89.95 – available from Electric Distribution.

So far, all the packages mentioned are for the Amiga. Better than any of them, certainly in ease of use, is *Cyber Studio* for the ST. Originally developed as a CAD package, the object editor CAD-3D 2.0 is an excellent example of the balanced use of windows, icons and menus. The working interface shown in the illustration provides an easy-to-understand drawing desk, which does tend to waste a bit of space that could better be used on a larger drawing area. The picture of *SculptAnimate*'s working areas shows that only very small gadgets around the windows are needed. Nevertheless CAD-3D is very easy to work with.

The excellent manual takes the user in easy stages through each part of the program. *Micro Magic*, *Aegis* and *Hashnique* could all learn something by reading this guide, namely that most people could produce good animations on their home computer if they had a decent tutorial, even when the software is not very user friendly.

Animation can be produced directly from within CAD-3D by saving each frame as it is rendered, making changes on the hoof. Smooth motion is aided by the use of 'multiple exposure' sequence files that display all positions of an object in motion as if frozen. Frames are saved as Delta compressed files.

More complex animations need the Cybermate animation editing language that comes with the package. This provides a wide range of facilities including key-frames and in-betweening, special effects, lap dissolves and even sound effects. Unfortunately, these facilities are not readily available wihout learning the Cybermate language, which makes sophisticated effects difficult to access. Nevertheless, *Cyber Studio* is one of the best animation packages on any machine. It has been well developed and modules for more sophisticated effects are on their way. Libraries of ready made parts such as spaceships, robots and human skeletons are also available. Highly recommended; but note that it requires an ST 1040.

SCULPTANIMATE 3D

Byte By Byte

£110 (requires Sculpt 3D, £69) – available from the Amiga Centre, Scotland

The best package was the last to be received, and fortunately the last to be tested. Once anyone with any interest in animation starts to use *SculptAnimate 3D* they will never want to use any other package. It is quite simply the best piece of software so far written for the Amiga – very powerful and yet simple to use, producing superb images.

The object editor has just three windows showing front, side and plan views. Around each are gadgets, simple developments of the standard Amiga window tools, allowing selection, rotation and movement of objects, plus *panning* and *zooming* of the view. Pull-down menus provide all other facilities.

Motion editing takes place in the same windows as object editing, by means of motion paths, splines (smooth curve devices), key-frames and object/motion name hierarchies.

Any resolution/number of colours can be used in rendering, which can also be at four levels of accuracy: wire-frame, painting (equivalent to *VideoScape*), snapshot (simple ray-trace) or photo (full ray-trace). Foreground and background pictures can be added. All images (frames) can be saved separately as IFF files and also delta compressed so as to be played back from RAM.

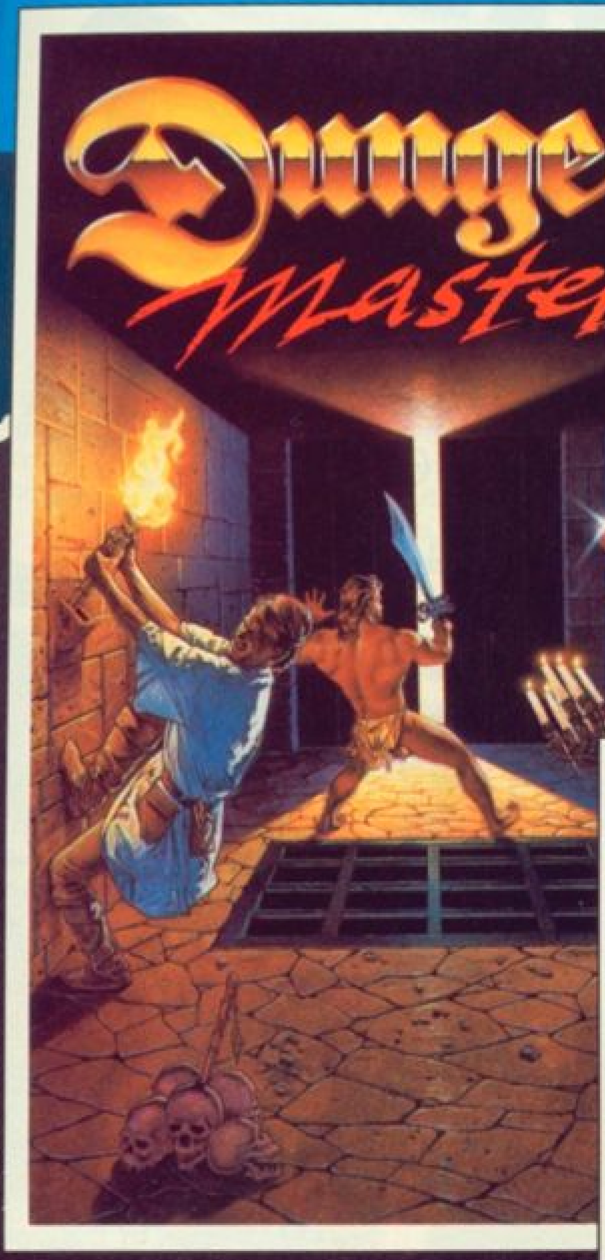
SculptAnimate's only real fault is that there is no Undo. This does not seem to present much of a problem. ●

N.B. A special thanks to Martin Lowe of the Amiga Centre, Scotland (031 557 4242) for providing software and invaluable technical advice.

The Verdict

For ST owners who want to tackle 3D animation, there's only one choice – *Cyber Studio*. This review can only touch on a few of the facilities it offers. If you do not have a computer, and you want to try 3D animation, there is no contest: get an Amiga and*SculptAnimate 3D*. If you have an Amiga you really should have this package - it is **the** bargain - but buy lots of blank disks, you'll need them!

MIRROR Soft



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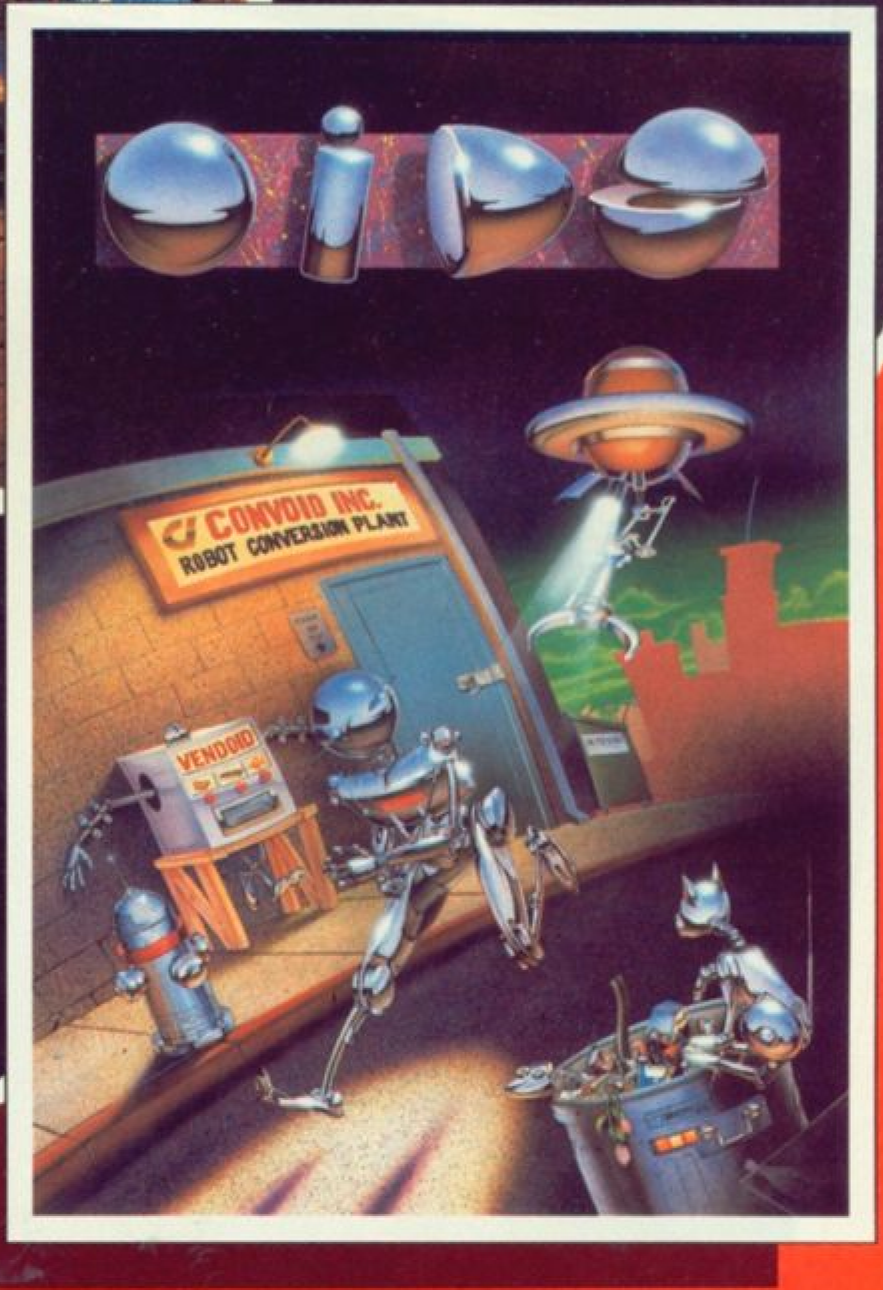

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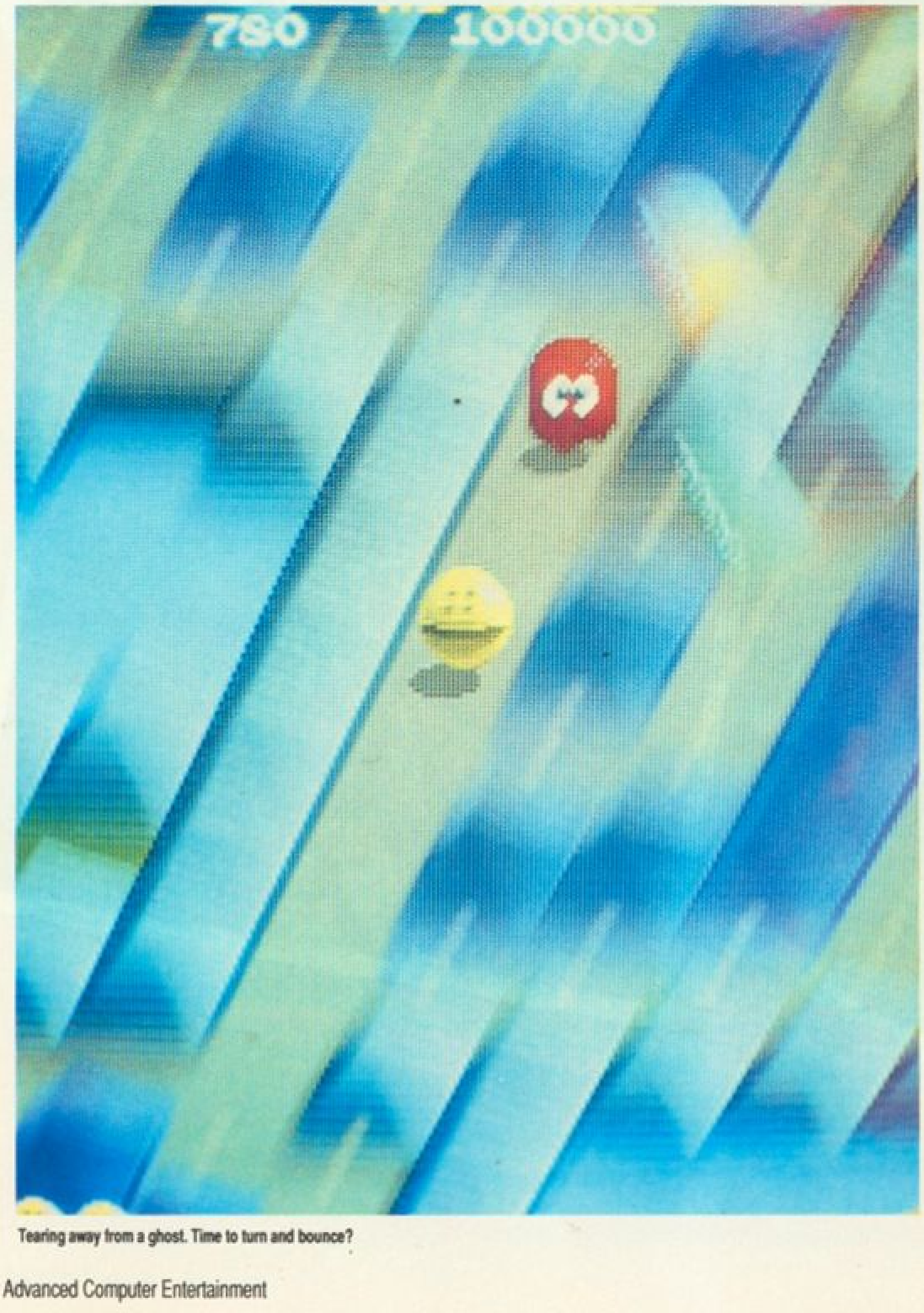
WELCOME BACK, PAC?

Some very old game styles are back in vogue in the arcades. Do the manufacturers assume we just can't get enough of the stuff? Or are they running out of ideas?



Tearing away from a ghost. Time to turn and bounce?

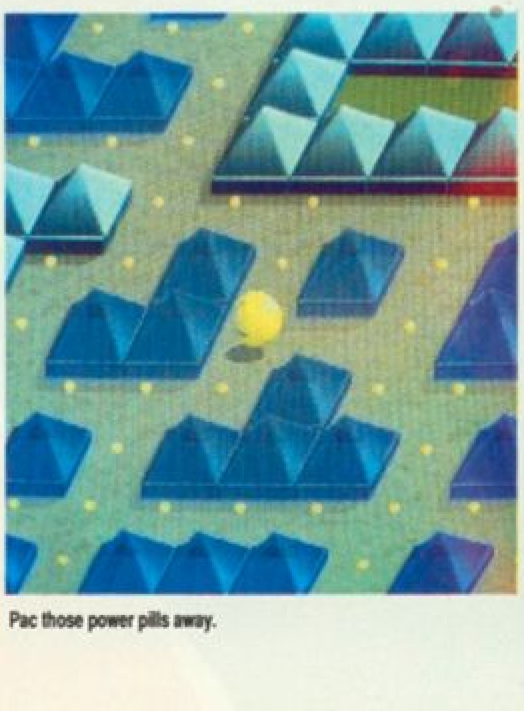
PACMANIA

Namco Price 30p

If the names Clyde, Inky, Pinky, Funky, Blinky and Sue make you break out in a cold sweat and start gibbering about power pills, cherries and strawberries, then the chances are you're an old *Pacman* fan. For years the *Pacman* games terrorised the arcades; you either loved the games or hated them, and if you loved them, well, you were hooked for good.

Seven years after his first appearence he's back. Now he's in stunning 3D and has learnt how to jump. The plot hasn't changed one iota in all this time so you've still got to clear each screen by eating all the power pills. You get a choice of start screen for each game, however, and the scenery changes accordingly. The jump facility means that nowadays you can actually run toward the ghosts, and bounce over them.

If you've been waiting for *Pacman* to become popular once again (you probably



Pac those power pills away.

EXZISUS

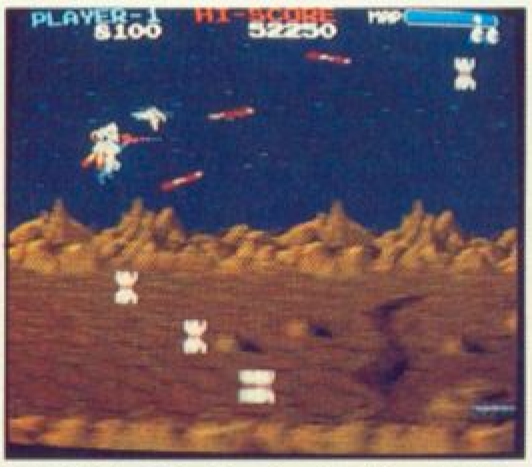
Taito Price 20p

Furious fire button action is your only hope of survival in this horizontally scrolling shoot-em-up. The game comes complete with a tried and tested arcade formula: fly your man through wave after wave of attacking aliens, pick up the benefits for more firepower and defeat the end-of-level guardian.

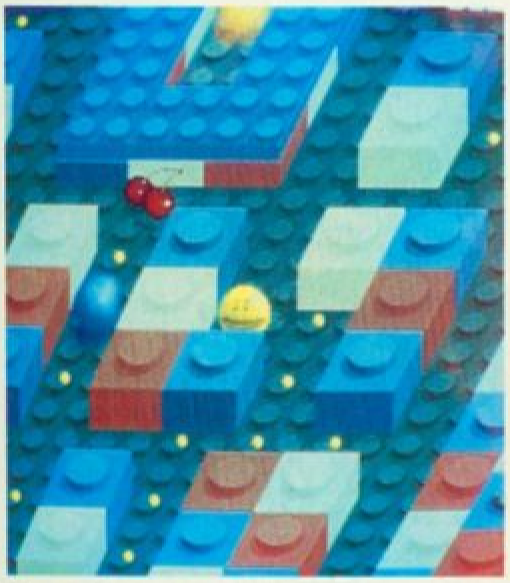
You've got a standard front-firing gun plus bombs to start with, and both are activated with the same fire button. Bombs come in jolly handy for destroying the few, but annoying, ground based installations. Symbols that appear throughout the game conceal extra benefits; shoot the symbol and collect the resulting letter. The benefits vary according to which letter you pick up. An L graces your gun with laser fire, while an F gives the player super fast quick fire. Holding down the fire button and the button that's located next to it on the cabinet results in quick fire mode being activated – very handy if you're in a tight spot.

On the earlier levels at least, there's no scenery to crash into so your only worry is destroying the aliens. Later, *Salamander*-type tentacles that cannot be destroyed appear from floors and ceilings and must be dodged. The end-of-level guardians can be tough to defeat, as you have to hit them in certain areas – you'll have your reactions tested to the full here.

Exzisus is a mish-mash of features from many other popular arcade games, with no exceptional or outstanding features of it's own. It's still playable and addictive with good graphics and sound, but it doesn't do anything better than, say, *R-Type* or *Salamander*.

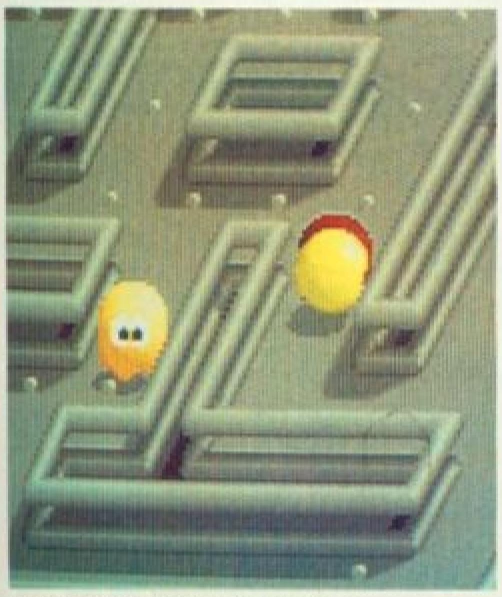


On the first stage. Fortunately you've got a droid to make the job a little easier.

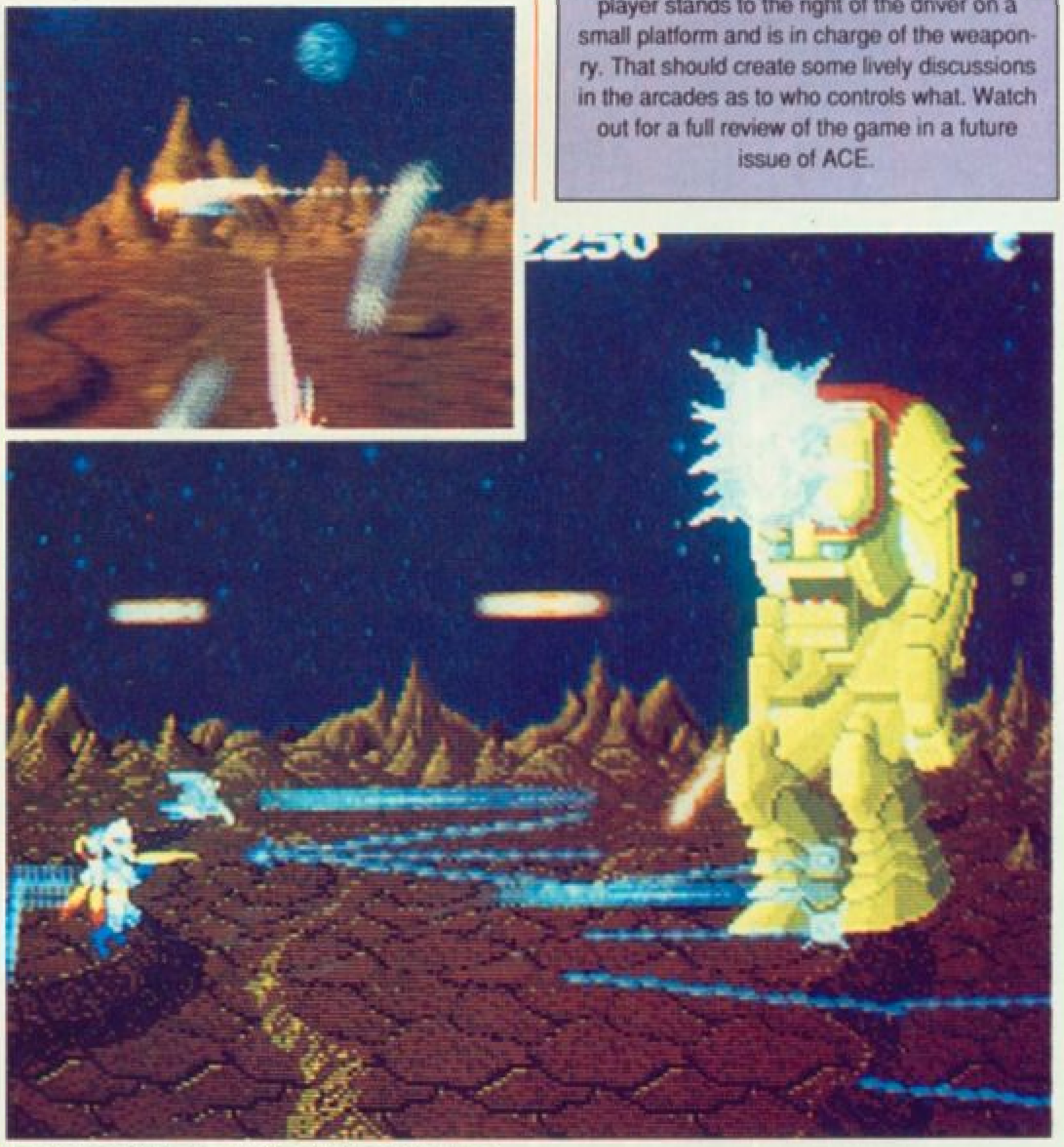


Can you beat the ghost to the cherries?

wear platform shoes and flares, don't you?) then *Pacmania* is the answer to your prayers. For anyone else, however, the interest is more likely to be due to nostalgia than addiction.



Oops! Even bouncing can't save you sometimes.



Up against an end-of-level guardian. Pump fire in as fast as you can.

BLASTEROIDS

Another old favourite given a new lease of life is *Asteroids*. The '88 version gives the player the chance to switch between three craft at the touch of a button. One of the craft is tough and can withstand a few bashes from the new, filled-in rocks. The next craft is not so tough but has a higher rate of fire and the third craft is very weak but very fast. Tactics are now the order of day; decide which craft to use in which situation and hopefully you can clear the sector of not just the asteroids but the swarming aliens that now make their appearance in the game.

VIGILANTE

Here's another collaboration of game styles: *Kung Fu Master* meets *Renegade* and *Double Dragon* for this beat-em-up. Same old plot – punch or kick the bad guys and defeat the gang leaders. You've got extras to pick up in the shape of rice sticks etc but once again we've seen it all before.

CYBER TANK

One of the newest machines to offer something different to the player is *Cyber Tank*. The game comes in a huge matt green camouflaged cabinet and is one of the first of the new co-operation games to hit the U.K. Two players are needed to control your tank. One is solely concerned with the driving, and so has two joysticks to operate and the other player stands to the right of the driver on a small platform and is in charge of the weaponry. That should create some lively discussions in the arcades as to who controls what. Watch out for a full review of the game in a future issue of ACE.

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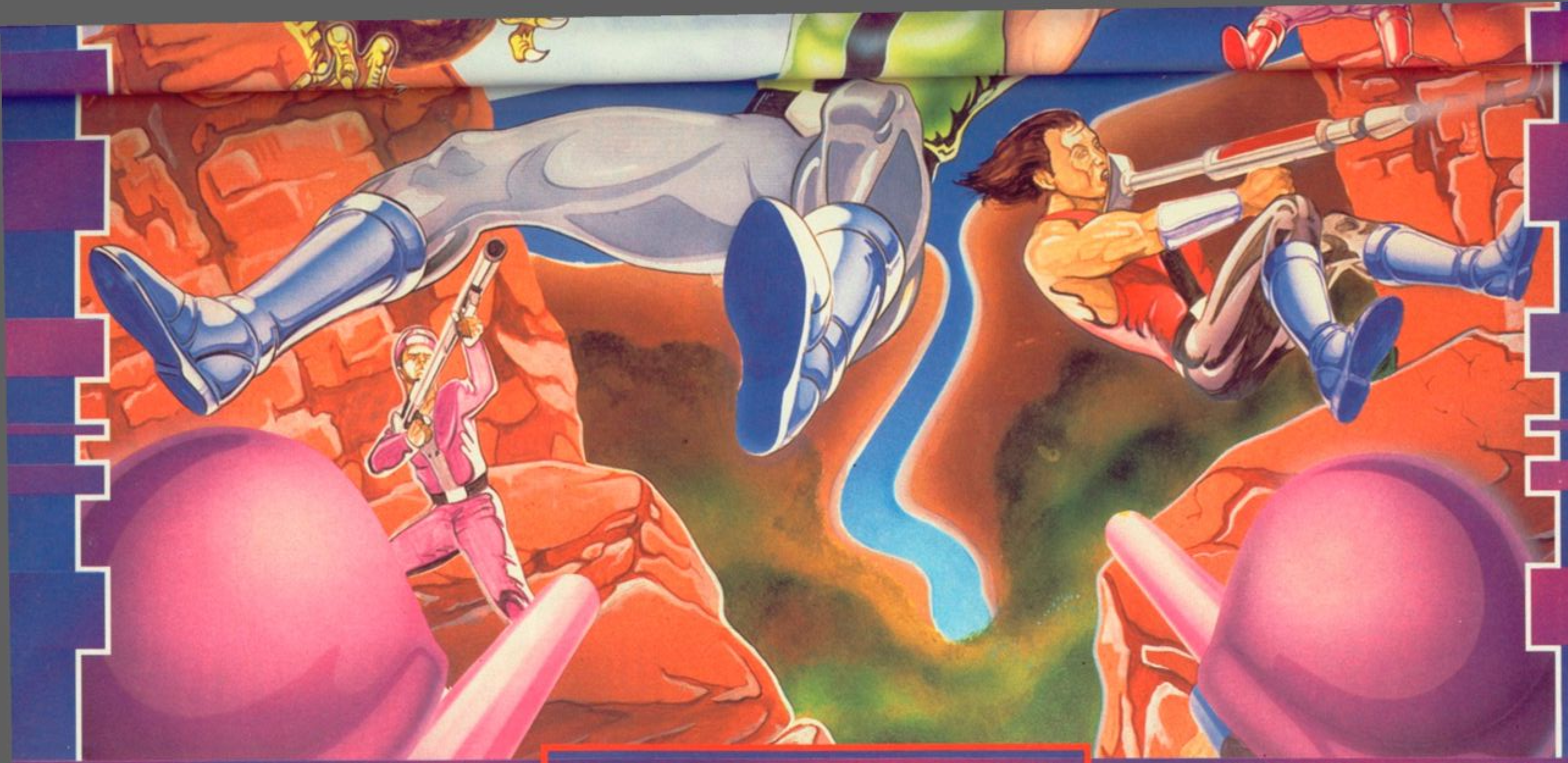

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Screen shots from Arcade Version.

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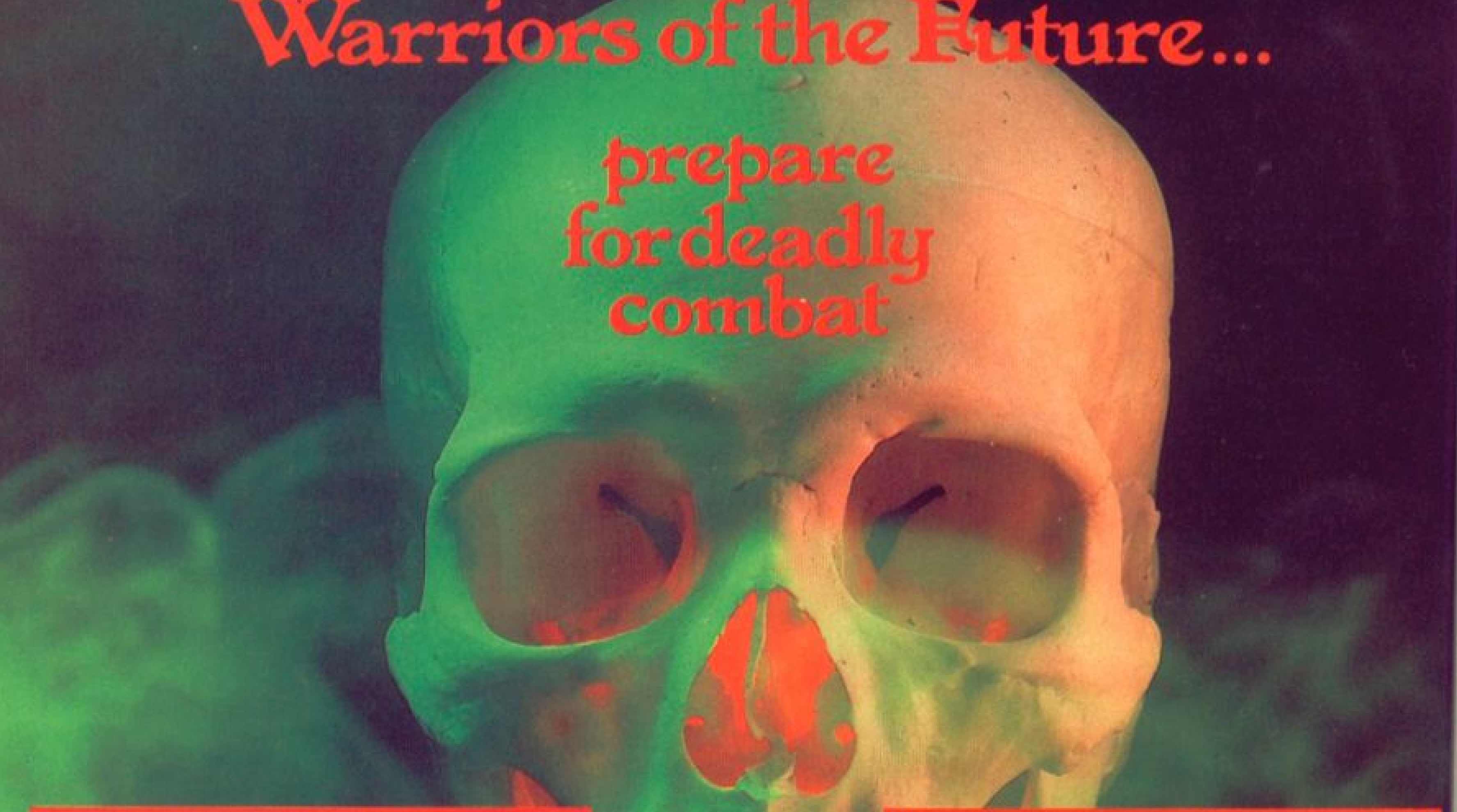
Warriors of the Future...



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BLOOD BROTHERS

"Our blood is mixed,
We are as one,
Let no man or beast come
between us,
And let nothing deter us from
our aim,
To avenge the deaths of our
parents,
And destroy the Scorpians,
DEATH TO THE
SCORPIANS"

Gremlin Graphics Software Ltd., Alpha House, 10 Carver Street, Sheffield S1 4FS. Tel: 0742 753423

What have the highest ACE-rated game ever, Atari's supercharged ABAQ and a Spectrum-compatible micro for the Third World all got in common? Cambridge, that's what! The city of dreaming spires and glittering prizes is home for some of Britain's top programmers and hardware designers – not to mention several major micro industry landmarks.

SILICON SPIRES

In the boom years of 1982-4, Cambridge was the centre of British micro technology. The University town's name lent an air of prestige to machines like Sinclair's Spectrum and Acorn's BBC Micro, and East Anglia was hailed as 'Silicon Fen' – the UK's answer to Silicon Valley, no less. The golden age didn't last: Acorn's now Italian-owned and out of the mass market, while Sinclair Research is no more than an Amstrad brand name. Other, smaller firms didn't make it through the bad times at all. But don't imagine Silicon Fen's dead and gone: not a bit of it. Out of the limelight, Cambridge is still doing its bit to shape the future of the micro business.

A MICRO FOR THE THIRD WORLD

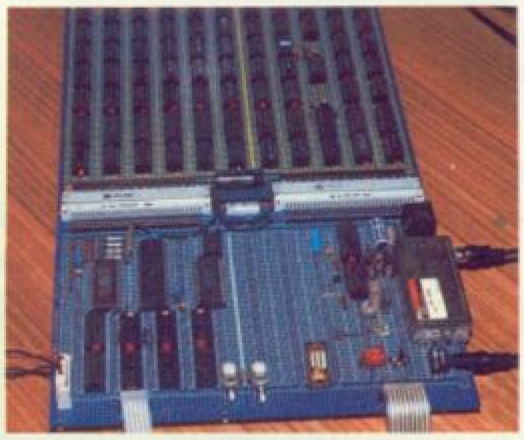
The last new micro to come out of Cambridge was the Acorn Archimedes. Just about the last word in conventional computer design, the 32-bit Archie's aimed at the educational market. The next Cambridge micro will also be aimed at education, but there the similarity ends. The forthcoming Miles Gordon Technology machine – tentatively named SAM – may be a lot of things, but state-of-the-art it ain't.

MGT aren't exactly a household name, but in Spectrum hobbyist circles they've built up quite a reputation. They designed the popular Disciple disk interface, and followed this up with a cheaper, more compact version called the Plus D. Now that the Plus D's bringing in the money this leaves marketing man Alan Miles and hardware designer Bruce Gordon free to work on SAM.

The machine's specification is surprising, to put it mildly. Its central processor is the Z80B, speedier cousin of the Z80A chip used in the Amstrad CPC and, more significantly, the Spectrum. The SAM's intended to be Spectrum-compatible in fact, and the current breadboarded prototype certainly does run a fair range of Spectrum games. There's still the ROM to come – the prototype uses an Amstrad/Sinclair item – but there's no particular reason why that should cause problems.

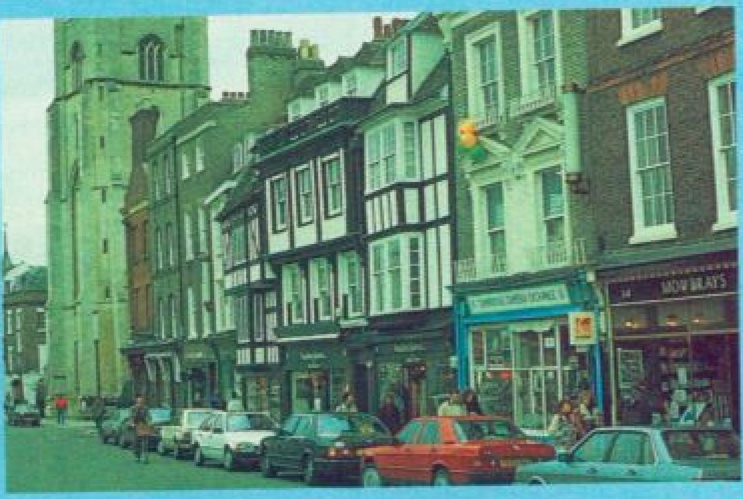
Alan Miles (left) and Bruce Gordon, founders of MGT.

If all goes according to plan the machine will have 256K of RAM, built-in networking and a price tag of around £100. Its four different graphics modes will allow 80 column text at a pinch, 8x1 attributes (like an MSX) or a 16-colour screen with no attributes at all.



The SAM prototype. The nearer board is the computer itself, while the more cluttered one in the background handles the video logic: this'll be replaced by a single custom chip in the finished machine.

Just how a machine like SAM will sell is open to question. MGT aim to license production of the machine in India and the Middle East for use in education – to which end it'll be getting a far better Basic than the Spectrum has – as well as manufacturing and



Sinclair Research (King's Parade)
Conquerors of the pre-Amstrad micro scene, Sinclair had their registered office upstairs from a row of gift shops and tobacconists. Overlooking the magnificent and much-photographed chapel of King's College, it's a far cry from Brentwood.

The BARON OF BEEF
Traditional Ales

The Baron of Beef
This fairly ordinary-looking pub made the national papers three years ago, and not for its unusual name either. Acorn founder Chris Curry and Sinclair Research's very own Uncle Clive fell to blows here over a magazine advert for Acorn's Spectrum-bashing Electron micro. There was no KO, but most observers gave former Mensa president Sinclair (now *Sir* Clive) a win on points.

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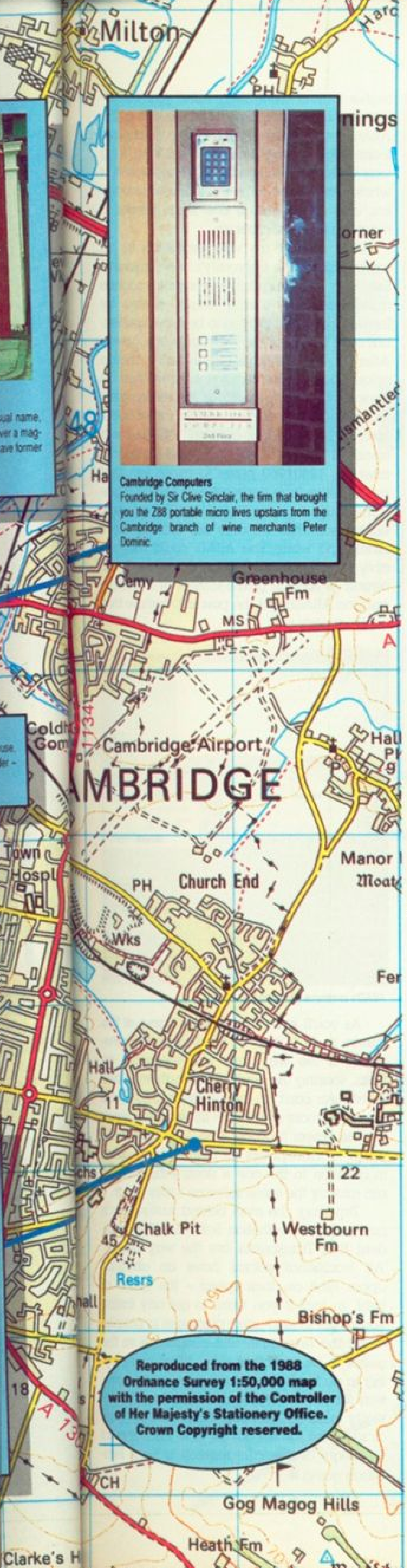
Perihelion Hardware
Just across the river from Bamber Gascoine's old college, the incredibly powerful Atari Perihelion ABAQ is taking shape nicely. The building wasn't always so high-tech: Lynx manufacturers Camputers used to operate here!

Miles Gordon Technology
MGT are currently working in one corner of a Z88 warehouse, but they're urgently looking for larger premises. Small wonder – there's hardly room to swing a soldering iron!

Acorn (then)
Down a narrow passageway leading off the market square lies the original Acorn HQ. Subsequently used by Acornsoft as their programming centre, this building brought the world the first ever version of *Elite*. Doesn't look like much – especially compared to Acorn's current set-up!

Acorn (now)
A converted pumping station, Acorn's palatial new HQ is situated in the quiet suburb of Cherry Hinton, and forms part of the out-of-town Cambridge Technopark. Here boffins are hard at work developing a new version of the Archie's super-fast ARM processor, which they hope will run at three times the speed!



Cambridge Computers
Founded by Sir Clive Sinclair, the firm that brought you the Z88 portable micro lives upstairs from the Cambridge branch of wine merchants Peter Dominic.

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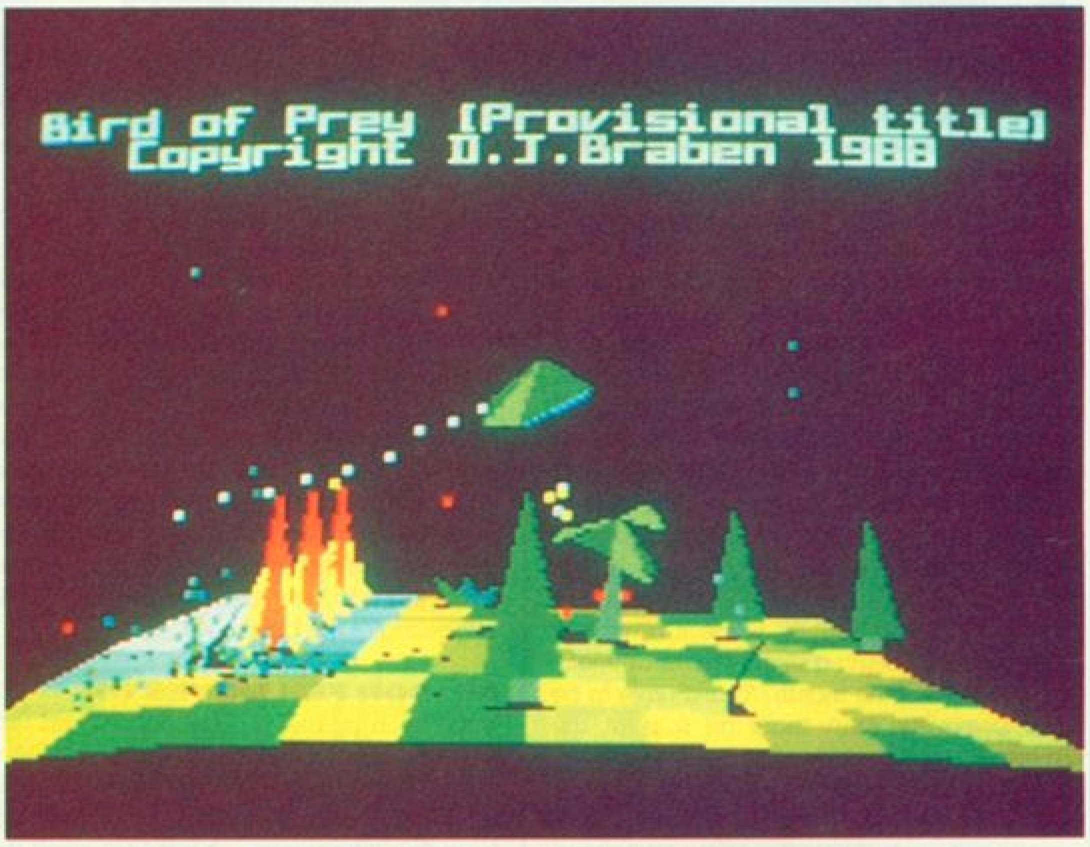
selling it here in the UK. But won't the 16-bit boom seriously damage SAM's chances in Britain? 'People don't need that kind of power' Alan Miles argues. 'It's like using a racing car to drive round to the shops. What people need in schools is a cheap micro you can network easily: that way you can buy a whole classful of them and connect them up together.'

There are other possibilities for a cheap, networkable micro of course. Multi-player games would be particularly suitable: the Spectrum compatibility means that games programmers know how to make the machine perform, and with a £100 price tag you could actually afford to get a few of them within a cable-length of each other.


Bird of Prey [Provisional title]
Copyright D.J.Braben 1988

ST ZARCH: There are still the clipping and combat routines to come – the title needs finalising too! – but already the game's looking very impressive indeed.

The SAM's chances as a mainstream machine aren't great, it must be said. Price rises to one side there's a heavy trend towards 16-bit machines, and not without reason. While the Z80 might be perfectly adequate for productivity – the Amstrad PCW and the Z88 are fine examples here – it really can't cope with the sort of demands modern computer entertainment makes. A year or maybe 18 months ago it might have been a very different story, but 18 months is a very long time in the home computer business.

GAMES INTO THE NINETIES

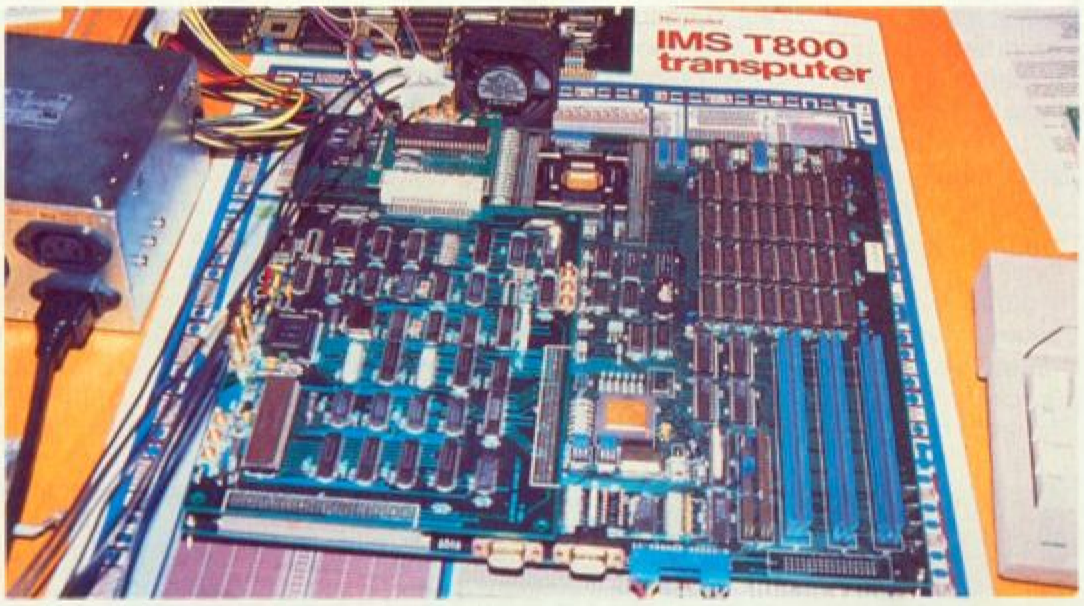
Although Sinclair Research more or less created the UK games market with the Spectrum, Cambridge programmers have always leaned towards the city's other micro giant, Acorn. The BBC Micro's hobbyist, academic leanings made it the first choice of most student hackers, but this tended to shut them out of mainstream games writing as the Spectrum gained the upper hand. Some have carried on writing for the Beeb however, and when the resulting games have made it across to other formats it's usually made quite a splash. *Elite* was originally a BBC game, conceived and written in Cambridge: sales on 8-bit formats have been spectacular, earning authors David Braben and Ian Bell a small fortune. Now there's a PC version in the shops, with ST and Amiga versions waiting in the wings.

Thrust was also a Cambridge game, as you might have guessed from its strong physics flavour. Author Jeremy Smith chose the Z-X-SHIFT control keys to match those on Acornsoft's version of Asteroids, but the same arrangement crops up in the very *Thrust*-ish *Oids* (reviewed on page 44) so the game's clearly done some influencing itself.

With the arrival of the Archimedes, Acorn fans are coming into their own again. The Archie isn't a major games micro and probably never will be, but the power and memory size of the 32-bit powerhouse mean that games developed on it will typically convert well to the ST and Amiga. Take *Zarch* for instance, the highest ACE-rated game ever: so far only available for the Archimedes, it'll soon be available for the ST and Amiga. Author David Braben's doing the conversion work himself, and already has the ST hoverplane flying. The finished game won't be quite as satisfying to look at as its Archie cousin – no surprises there – but the latest ST version runs at a healthy 15 frames per second or so. By 68000 standards, this one sings and dances.

Visually, the main loss compared to the Archie stems from the ST's smaller palette and fewer on-screen colours. The Archie's phenomenal 80K display offers 256 colours on screen at once out of 4096, allowing *Zarch* to use 'depth-cueing' – a system where the landscape gets darker as it recedes into the distance. Depth-cueing makes the game intensely realistic, but with only 16 colours out of 512 the ST just isn't up to the task.

Neither, surprisingly enough, is the



The multi-storey ABAQ motherboard: the three blue edge-connectors in the foreground take 'farm' cards or extra memory, while the micro-fan in the background keeps the whole thing cool!

Amiga. Though the practical maximum (32 colours out of 4096) might sound like enough, Amiga *Zarch* will actually only use 16 colours on screen at once – and will still run slightly slower than the ST version. The blitter simply isn't suited to the sort of tasks the game involves, it seems, so the 68000 has to carry the whole burden. 'It's the set-up time,' Braben explains. 'The blitter's very fast once it's working on a problem, but it takes so long to get the thing going that overall it's slower than the 68000.' In other words, the Amiga's no better than an ST for this kind of thing: in fact it's slightly worse if anything, the ST's 68000 being a slightly faster animal.

Surprise of the month? That'd have to be the possibility (and that's all it is at the moment) of Spectrum *Zarch*. Granted the very idea sounds ridiculous, but from a few back-of-an-envelope timings it looks like it could just work. As for the colour limitations, you can work those out for yourselves!

Other things solid and 3D are also afoot in Cambridge, in the form of *Conqueror*. Written by Jonathan Griffiths but using *Zarch*'s 3D display routines, this tank warfare title made an appearance in ACE issue 4's **Game of the Future** special. It's about to become a game of the present now, thanks to the Acorn-orientated Superior Software, so you'll soon be able to drive out in your T34/76 to take on those enemy Panzer III's. There are a good range of other tanks to try, and you can choose just how strategic the game's going to get – assuming you can actually afford the hardware to run it on, of course.

Jack Lang, head of Perihelion Software, shows off an ABAQ 'farm' card. Plug this in and you've got five times the processing power!

At present *Conqueror* has to be one of the most exclusive games commercially available: it's only out on the Archimedes, and not any old Archie either. You'll need a 310 or 410 series machine to run it on, so buying game and micro together would set you back rather more than £900. ST and Amiga owners will have to wait a few months for their versions of the tankbusting epic – latest word is that they'll be published by Activision – but A305 users may as well start grinding their teeth now: it looks like the game just won't fit into the smaller Archie. No sniggering at the back now!

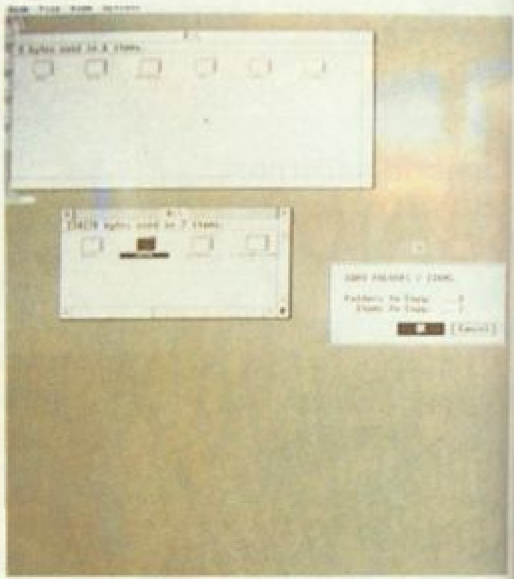
SILICON FEN MOVES ON

Once upon a time, a Cambridge-based firm by the name of Computers used to build a home micro called the Lynx. The Lynx could have been a contender, as they say, except for a few little quirks – it wouldn't scroll the screen once you reached the bottom line, that kind of thing. To cut a long story short, Computers eventually stopped producing the Lynx and shipped out. They were only the first casualties of a tough winter: poor Xmas sales convinced City analysts that the micro boom was over, badly damaged Oric (the Atmos people) and drove Acorn into the arms of Olivetti.

Tim King, the man behind ABAQ's revolutionary operating system *Helios*.

Computers may be gone but their offices, behind an expensive restaurant on Cambridge's Bridge St, are still in use by the computer industry. Now they're home to a rather higher form of technology mind you: Perihelion Hardware are busy there, building the ABAQ workstation for Atari. The Transputer technology driving the ABAQ is a long, long way ahead of the Lynx's Z80: it represents a whole new stage in the evolution of computers, and ABAQ sees it one stage nearer to reaching home-micro form.

ACE caught up with Perihelion in an exam hall on the University's New Museums Site, at a recruiting fair for computer science undergraduates. Colour demos written by Inmos's Phil Atkin proved to be crowd-pullers, but only hinted at the machine's true power. After all, an ABAQ picture in half a million colours doesn't look *that* much better than an Amiga one in a mere 4096. The million-pixel black and white display gave a rather better idea of scale. A 160-column, 120 line text screen is impressive but not mind-shattering: after all, 1280x960 pixels in mono isn't that much better than the resolution some Macintosh set-ups can manage – but the comparison's deceptive. It's only the monitor that's black and white; the ABAQ could comfortably manage 1280x960 in 16 colours. That's almost 20 Atari ST game-screens at a glance, and the ABAQ's got the power to handle that much display too.



ABAQ's enormous GEM desktop.

As you'll know if you read **Game of the Future** in ACE issue 4, the beauty of Transputers is the way they can cooperate on tasks, sharing the work between them. If one Transputer can't do the job fast enough, you can plug more of them in till your machine's got the power it needs . The ABAQ can take up to 12 Transputers on plug-in 'farm' cards in addition to the one it starts with and still run exactly the same software – only faster.

Tim King, the man behind AmigaDos, is now head of Perihelion Software. He's confident that Transputers are the way ahead: 'All traditional micros have an absolute upper limit on their speed – the speed of light, in fact! If you want to get any faster, you've got to start using processors in parallel – and the Transputer was designed from the outset to be used that way. What we're trying to do is create a standard operating system for the Transputer, in time for when it really takes off.' Tim puts this point two years or so in the future, but for now there should be plenty of specialist markets to keep Perihelion going.●

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Will there ever be a game in which the alien opposition actually evolves its own intelligence? Could Space Invaders learn to fight back? Simon Beesley is running scared...

ALIENS ALIVE!

Let's face it, if a virus has just trashed your disk (which is unlikely as most viruses to date have been fairly benign) then it's going to take more than a Hamlet cigar to restore your good temper. You'll probably climb down off the ceiling after half-an-hour or so, and the screams will die down by the end of next week. Even then you'll be taking the same line as the rest of us – complaining bitterly and deploring the virus as a case of computer vandalism.

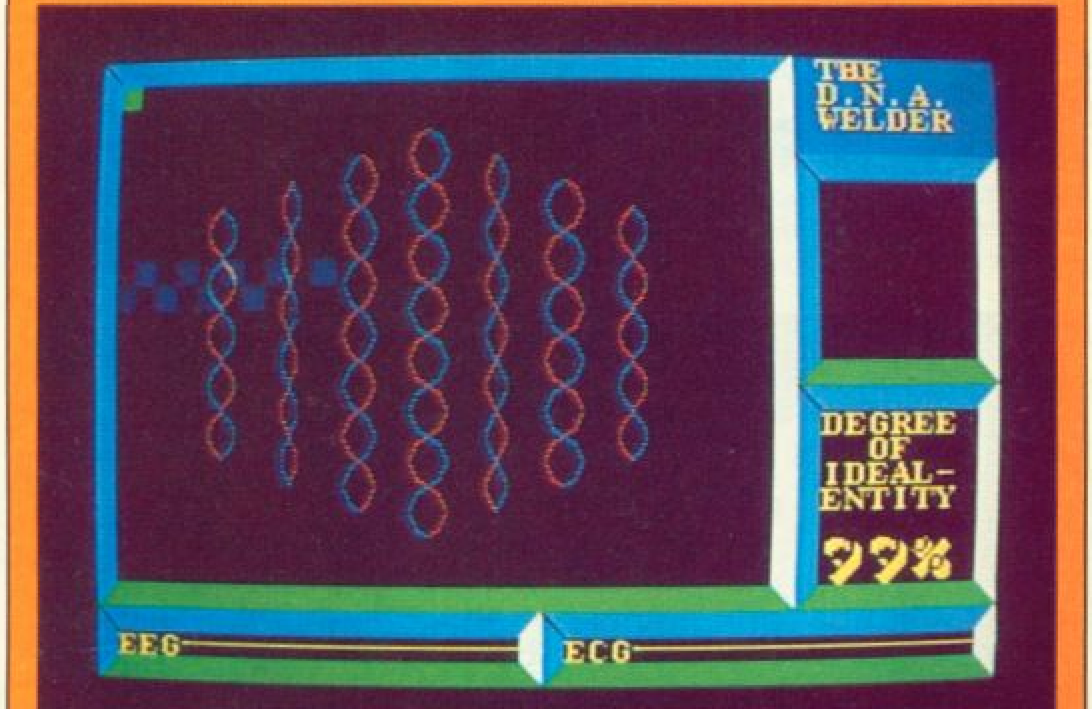
Secretly though, you are probably intrigued, even (dare we say it?) excited by the idea. As everyone knows, computers are inert without software. Yet even with software, they're still highly predictable since they're only doing what they've been told to do. With a virus, however, you can sustain the illusion that something else has emerged: a degree of computer autonomy. When the Amiga virus developed by the Swiss hacking group SCA announces its presence, it does so with the message: "Something wonderful has happened. Your computer is alive". Exactly.

It's considerations like these that explain why the prospect of a new genre of games inspired by biological principles can be so fascinating. True, it is only a prospect – the biological game doesn't exist, or rather, it hasn't yet evolved – but there are a number of programs that come close to it and – at the very least – point the way to what is possible.

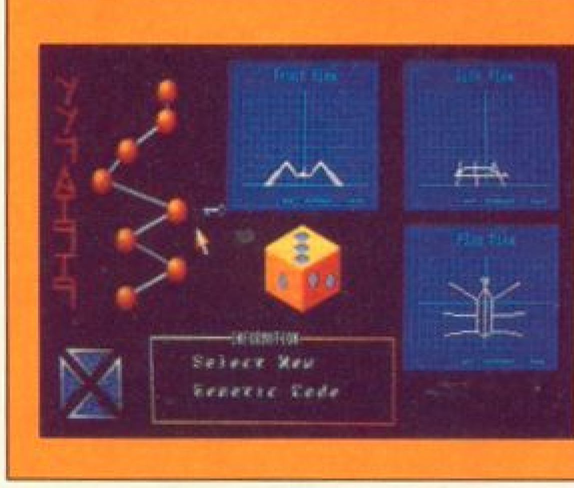
The final step along the way will be to produce games in which the alien opposition is born, lives, and dies – and in the process evolves it's own game techniques with the objective of defeating you - the player.

The grandfather of all Life-games is Life itself (see box), invented by Cambridge

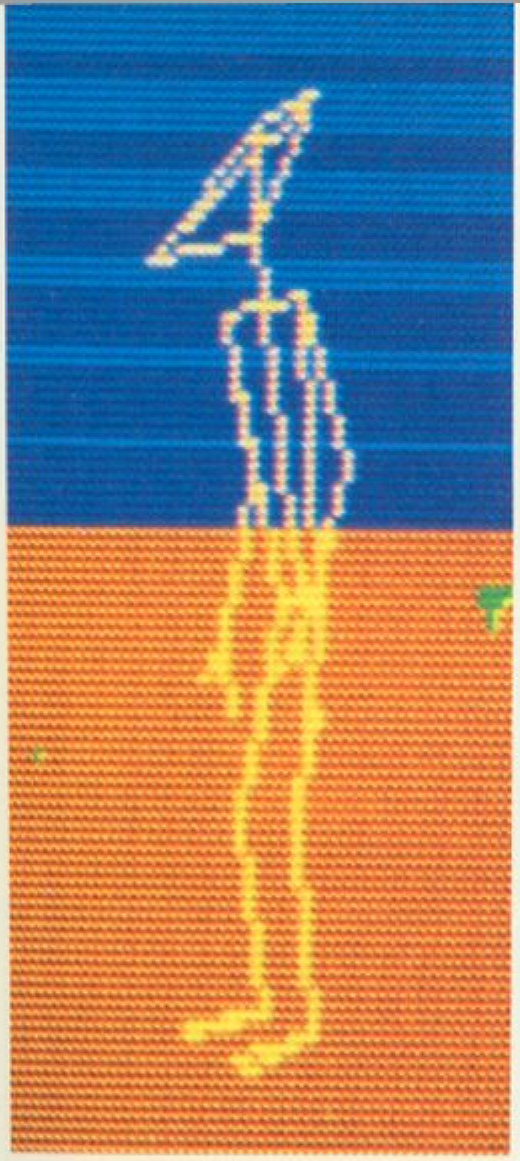
EVOLUTION GAMES EVOLVE...



▲ 1984: *Deus Ex Machina* – hailed as a step forward in game development, the first 'concept game'. Yet even then it was more talked about than played, mainly because the actual gameplay was strictly humdrum. It now survives as an interesting period piece, a brave attempt to defy the inexorable laws of game evolution. The concept had you retracing the evolution of the species from DNA strands to homo sapiens.



◀ 1988: *ECO* makes more of an attempt to model natural selection, as opposed to merely depicting its effects. The player gets a chance to tamper with gene mechansims, but only in a limited fashion. In the real world, natural selection works blindly with random variations to produce designs of staggering complexity. A true application of The Blind Watchmaker principle would generate games or game characters that were not quite so predictable.



mathematician John Conway in 1968. More recently, Richard Dawkins, an Oxford zoologist, has devised a game called the *Blind Watchmaker* to illustrate the process of evolution. Two other candidates are the now almost-forgotten *Deus ex Machina* and *Eco*, two games which are superficially based on the theory of evolution. Once you've checked out these programs and the programming principles behind them, you begin to realise that the concept of evolving aliens in a game isn't so outrageous after all...

THE BLIND WATCHMAKER

Richard Dawkins developed the Blind Watchmaker game for the Apple Macintosh while writing the book of the same name. Put briefly, the book is intended to show how effective Charles Darwin's theory of evolution is. And on a much smaller scale, the game does the same thing.

Blind Watchmaker, the game, illustrates the theory by showing the evolution of graphic shapes (initially the shapes are branching trees) on-screen. The rules for drawing a shape correspond to the biological genes which control the form of a species. A shape evolves as the rules are randomly altered from one round of the game to the next. By selecting one small variation (matching a mutation in the genetic code of a species) after another, you may end up with a shape dramatically different to the first generation tree. These creations Dawkins calls 'biomorphs'.

The point of the game is to show how a succession of small cumulative changes in a handful of simple drawing rules can lead to highly complex designs. Like *Life*'s patterns, the shapes that emerge are often quite unexpected and unpredictable.

However, these shapes develop in a

Life

Life takes place on a grid of cells, each of which is either on or off. On a simple text display, the grid may consist of rows and columns of character spaces – the letter 'O' represents a live cell and a dead cell is left blank. More commonly, the screen's pixels form the grid and a live cell is one where the pixel is drawn in a foreground colour.

Bearing in mind that each live cell can have a maximum of eight neighbours (including diagonal neighbours), *Life* proceeds according to several simple rules:

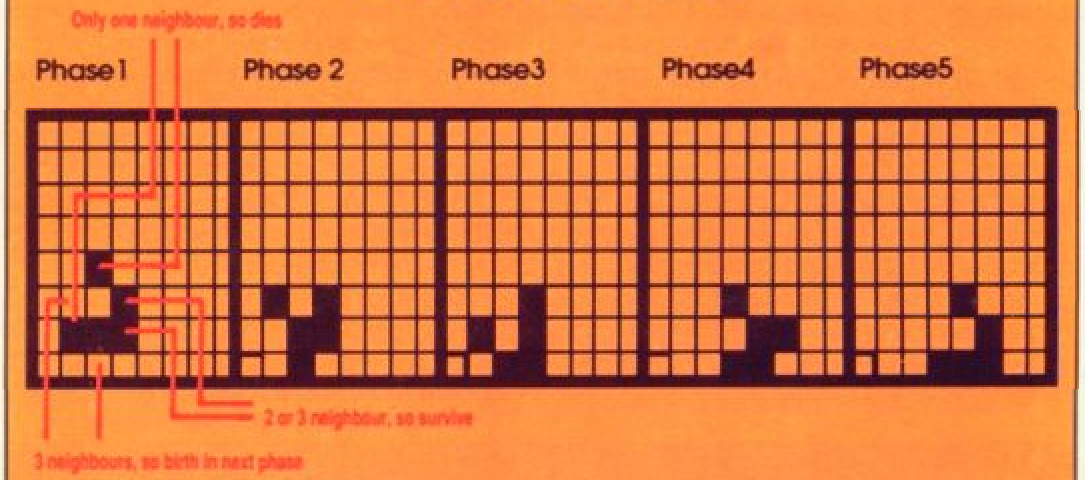
- If a (live) cell has two or three neighbours, it stays alive for the next generation.
- Any other number of neighbours means that the cell dies. In the next generation, the box it occupies on the grid will be blank.
- Three neighbours surrounding a blank box give birth to a new cell. In the next generation the box will contain a new cell.

Notice that what we're really talking about are simple graphical boxes on the screen, but that we have referred to them as biological 'cells'. When you see a pixel-based *Life* screen in action it is hard to think of them in any other way – further testimony to people's tendency to personify what they see, seeking for real-life significance even in an inert computer 'virus'.

To start a game of *Life*, you either lay down a pattern of cells yourself (using the cursor, mouse or joystick), or let the computer randomly seed the initial *Life* universe. The program then passes from box to box calculating whether cells will live, die or be born. When it reaches the bottom of the screen, it displays the next generation.

If the computer is fast enough to calculate new generations at a rate of, say, at least twice a second, the screen action becomes animated. Cell clusters grow, disintegrate, collide with each other and form new patterns, and a whole *Life* terminology has sprung into being to describe them. Some *Life* objects move across the screen ('gliders'), some evolve into stable unchanging patterns ('still lifes'), others become 'oscillators' and go through a cycle of symmetrical patterns; a single cluster of cells may in turn generate hundreds of other shapes before finally settling down. In short, the screen appears to take on a life of its own. It's a microcosm, rather like looking at a speeded-up bacteria culture under a microscope.

LIFE IN MOTION...


Only one neighbour, so dies
Phase1
Phase 2
Phase3
Phase4
Phase5
2 or 3 neighbour, so survive
3 neighbours, so birth in next phase

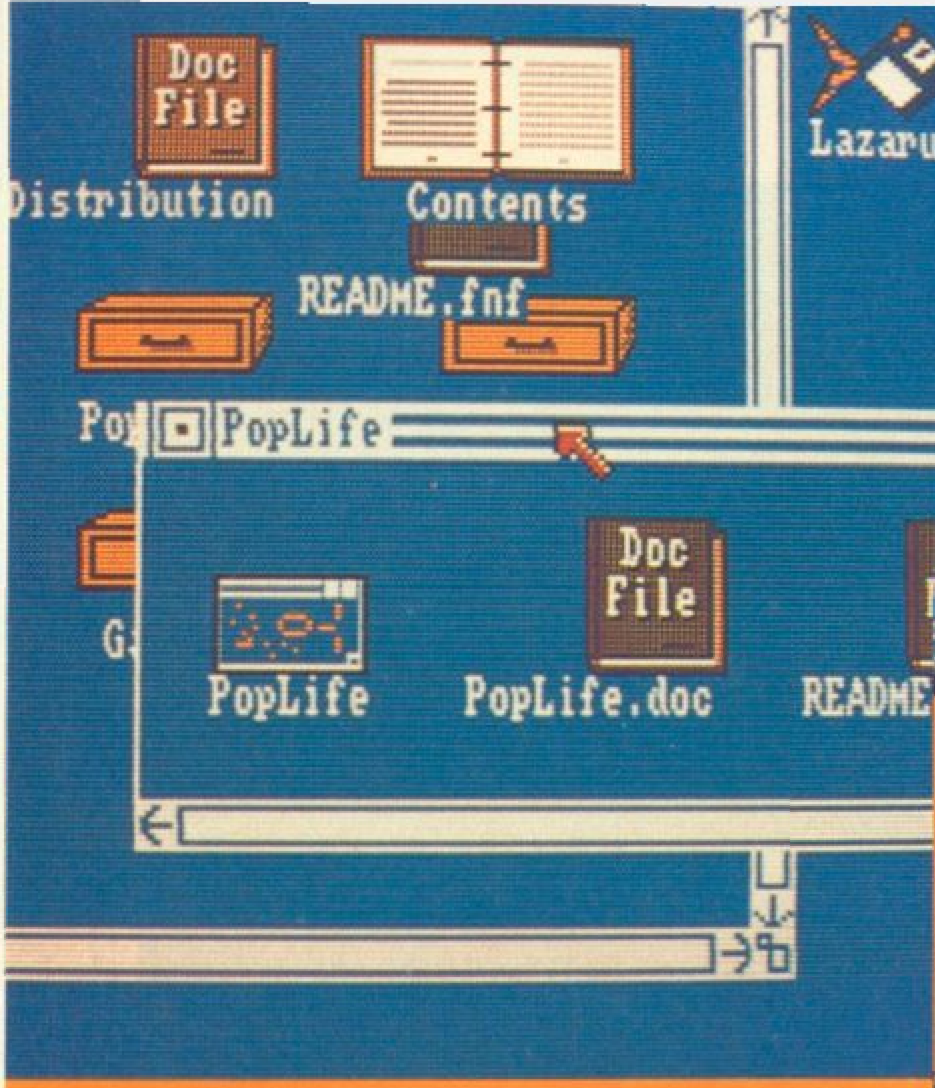
This diagram shows the 'flight path' of a *Life* 'glider' – a particular cell-pattern that can detach itself from a group and 'fly' across the screen. The pattern has a life-cycle of four stages before returning to it's original birth pattern.

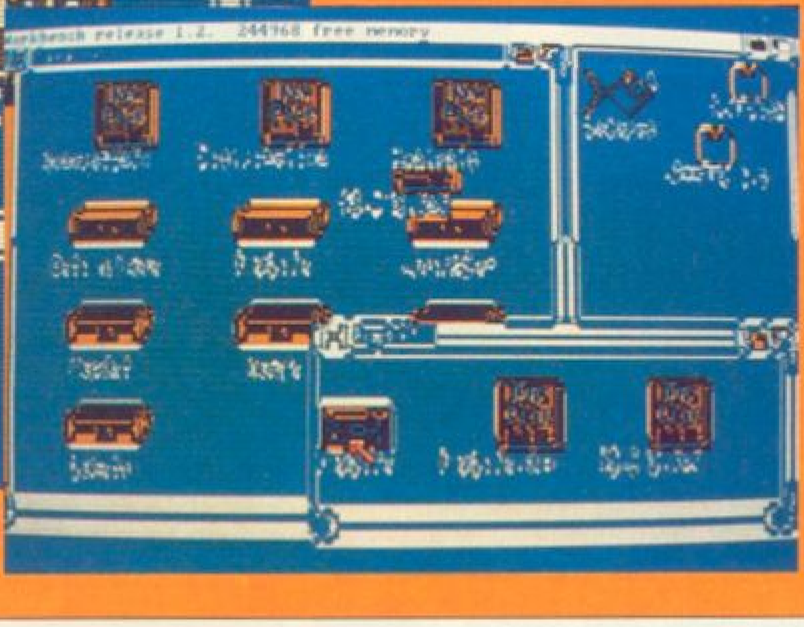
Origin of the Theories

Steve Dawkins' book The Blind Watchmaker is the latest in a long series of publications inspired by the controversy surrounding Darwin's Origin of the Species. This book was published in 1851 and his theory of evolution has been generally accepted ever since as the only viable scientific explanation of life on earth.

Well, almost the only viable explanation. There is now a sizeable body of Creationists, mainly in the USA (and among them several presidential candidates), who believe otherwise. Extreme Creationists hold that God created the world and all its creatures in 4004 B.C, at the same time cleverly covering His tracks by leaving fake fossil evidence of an evolutionary process starting several thousand million years earlier.

If you think that's weird, then wait till you catch up on the so-called Anthropic Principle. Broadly speaking, this offers an interpretation of modern physics which says simply that the alien on your monitor screen didn't exist until you spotted it. Leading on from this is the idea that the world exists primarily to be observed and therefore, by implication, primarily for observers – i.e. us humans. Which takes us back to the Biblical idea of creation as a nursery for mankind, but with more 'scientific' credentials...





SCREEN UNDER ATTACK

PopLife in action. Screen one shows the desktop display before executing the PopLife program.

Screen Two shows a serious degree of biological deterioration!

particular direction according to the player's selection. It's the player, rather than any process of natural selection, that makes the choice over which variation will survive and bequeath its genes to the next generation. True evolution on the other hand (according to Darwin) is the process by which features favouring survival become dominant. In the most commonly given example, natural selection explains how giraffes acquired long necks: because long-necked giraffes were better suited to reaching food at tree level, and so survived better than short necked giraffes.

This is where, for us computer gamers, the challenge comes in. It's been issued by Richard Dawkins and is startlingly simple, but has tremendous implications. The challenge is to make the computer do the selecting; to build in a hostile environment which decides whether a biomorph survives or not. 'Ideally,' he says, 'the environment should include other evolving biomorphs: predators, prey, parasites, competitors."

The evolution of computer gaming has thrown up the species best fitted to meet this challenge – games programmers. Actually Richard Dawkins puts it rather differently but the gist of it is the same: 'They are already accustomed to setting up a little world in which creatures interact with each other. All they would need to do is introduce some random pertubation, to Darwinise the game".

A GAME FOREVER

This idea of 'Darwinising' a game has the most enormous implications for computer entertainment. The main reason ACE introduced the PIC curve in the review section was the importance of lasting interest in a game. Take a typical shoot-em-up – Plutos,

Where to find Life

If you want to pursue your own life studies, the first thing you will need is a competent version of Life. Guides to BASIC often supply a listing for the game, but BASIC is too slow. What is required is a program which delivers a fast generation rate over a high resolution grid. The bigger the grid, the better; otherwise lifeforms do not have enough room to develop and die off when they reach the edge. Some Life programs solve the problem by wrapping the grid round. The left side of the grid is then continuous with the right side, while the top left hand cell maps on to the bottom right cell. This turns turns the grid into a toroid (a doughnut with a twist in) – good for displaying glider paths or spaceship movement.

The best source of Life is the public domain software libraries. These software collections always include some applications of early game concepts. Even when the public domain library is for a new machine, you can be sure to find an example of Star Trek or Breakout, and Life.

Of course, they also go much further. The Fish disk library for the Amiga is particularly well stocked with high quality games, and graphics applications. In fact the Fish disks alone are almost reason enough to buy an Amiga. Rummaging through 50 or so Fish disks, I turned up two versions of Life – 3D Life and PopLife; and there are probably others.

PopLife is one of the whackier instances of Conway's game. Using the blitter on a pixel based grid of 640 by 256, it manages to achieve a rate of almost seven generations per second. You click on the program icon in the Workbench screen, and it starts straight away, taking the Workbench icons and windows as its initial pixel patterns. The effect is rather disconcerting – as if the Workbench screen is being corroded by bacteria. You can click on an icon to redisplay it only to have it instantly dissolve into cell clusters.

For the Amstrad PC and other IBM compatibles, there is Kiwilife in which new generations are shown in different colours. ACE's stablemate PC Plus supplied this last year on one of their cover disks.

With a version of Life in hand, you can then begin to explore the Life universe, to do your own natural history. Remember, though, that people have been investigating Life's flora and fauna for the past 20 years. Whatever you discover has almost certainly been catalogued already. So it might be a good idea to take advantage of their findings by consulting a book on the subject. Although heavy going in places, William Poundstone's Recursive Universe is highly recommended as an introduction, and it's available in paperback.

Life variants

John Conway's rules seem to strike just the right balance between making *Life* too hostile an environment and too fertile. Most attempts to modify the rules backfire: the screen becomes overcrowded or there is not enough variation. In *3-4 Life*, for example, cells survive if they have 3 or 4 neighbours, and they are also brought into existence with either 3 or 4 neighbours. The trouble is that the screen soon fills up and resembles what has been described as a "furiously churning crossword puzzle that never settles down".

Mike Singleton, interviewed in last month's ACE, is a creative *Life* enthusiast who has developed more successful *Life* variants for the Atari ST by changing the rules in a different way.

Chrome works by taking into account the colour values of neighbouring pixels. There are sixteen colours on-screen and each has a value from 0 to 15. The program sums the colour values for a pixel and its four orthogonal neighbours (two up and two to the side). Then it consults a table to see what colour the pixel should take in the next generation. The resulting effect is spectacular: a Minteresque light show only more varied and more spontaneous.

With *Darwin*, Mike Singleton has introduced *Watchmaker*-style genetic mutations to *Life*. Once again, there are 16 different coloured species. A cell survives when there are 2 or 6 neighbours, otherwise it dies. But if it has two neighbours, it also gives birth to two offspring of the same species. Just where they are placed in the eight cell field depends on the position of its neighbours. Every species has its own genetic code made up of 56 genes. Since there are 56 different ways in which the two neighbours can be positioned, each combination triggers a particular type of reproduction; i.e., neighbours at positions 1 and 8, could trigger births at 3 and 5. Genetic mutations occur when a species is wiped out.

The rules sound mind-bogglingly complex but the result is a game that is as absorbing as *Life* itself. Species attack each other and a dominant species emerges, filling much of the screen with its own colour. The interesting thing is that the dominant species then usually suffers a catastrophe. There is a flash of colour and a mutant takes over. So this version of *Life* goes on...and on...

you start playing, it's a battle between you and the opposition. Only problem is, in the long run there can be only one winner – you.

That's because after a time you begin to recognise the alien flight patterns, positioning your craft in the right area of the screen to welcome the little devils with a blistering hail of laser-fire. There's a lot of satisfaction in this, but it pales into insignificance beside the idea of a game in which the aliens start altering their flight patterns, let alone one in which they develop stronger firepower and ambush techniques. A game like that wouldn't just last a few months – you could still be playing it in fifty years time!

Unpredictability and the lasting interest it generates is one of the main features that makes *Life* so fascinating. For the beginner, the only way to tell how a pattern will develop is to try it and see. Despite the simple basic formulae in the game, *Life* enthusiasts have spent an enormous amount of time exploring the *Life* universe, classifying its objects and devising new ones. There is even a newsletter for enthusiasts called *Lifeline*. One of the questions that occupied the pioneers was whether they could devise a pattern which kept on growing. John Conway put up a $50 prize for the first person to find such a pattern. It was collected by William Gosper (of the MIT group of investigators) with the invention of the glider gun – it shoots out gliders every 30 generations.

Many of the most interesting *Life* phenomena, however, were discovered by chance. Spaceships, which are similar to gliders but bigger, were spotted when one of John Conway's colleagues noticed a large object moving across the screen and managed to stop the computer in time to identify it. The lesson is simple – some basic mathematical skullduggery can introduce aeons of variation and evolution.

GAMES ALIVE!

Strictly speaking *Life* (as described elsewhere on these pages) isn't really a game at all (it's more a spectator sport). There is no interaction, and you can't win or lose. But could the ideas behind *Life* and *Watchmaker* be applied to games design? By introducing a few rules for cell generation or by borrowing a few techniques from evolution, would you be able to design a game where the game play took an unpredictable course?

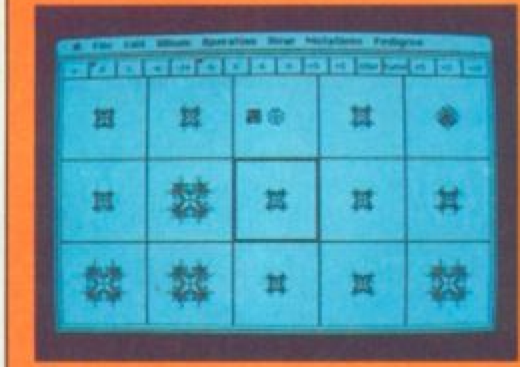
Perhaps, as *Lords of Midnight* programmer Mike Singleton speculates, the creatures that emerged from Dawkins' software test tube could be used in games: 'you could actually sell a game that evolved with the player – to meet the player's skill level'. In this case, the player would provide the hostile environment needed to select the fittest from the game's various software lifeforms.

More realistically, though, Mike Singleton thinks that the world of the biomorph is far too complex to be adapted to a game. Too much processing power is called for. Dawkins's challenge may have to wait for the day when games are played on parallel processors.

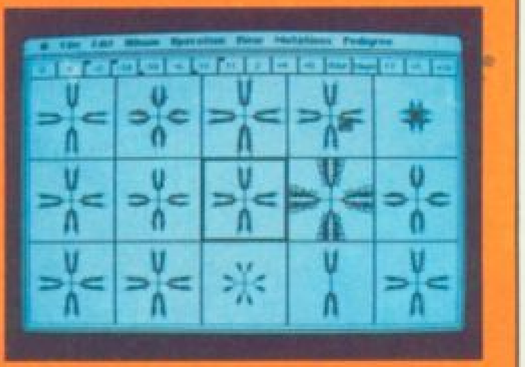
For the time being, programmers might like to try out another Singleton idea: a game based on multi-cellular creatures similar to *Life*'s objects but with a new set of rules. Different colours would represent separate cell functions. Thus you would have egg-laying cells, motor cells to shift the lifeform across the screen, sensor cells, and so on. Natural selection can enter the game via competition with other lifeforms, and you can introduce mutation at the egg-laying stage, possibly employing radioactive zones to trigger it off.

Programs like *Life*, Mike Singleton's *Chrome* and Steve Dawkins' *Blind Watchmaker* have all established sound principles for the generation of on-screen life-forms. Despite Mike's scepticism about the possibilities of introducing into games at the present time, here at ACE we reckon there's enough processing power in an Amiga or an ST to get something going. One thing's for certain – whichever software house succeeds in producing an 'evolutionary' game is going to make a fortune. Meanwhile, we suggest that you keep practising your laser techniques – so that when the opposition does start acting up, you'll be ready for them ●

BLIND WATCHMAKER IN ACTION



Not very promising..



We're getting there...only another few thousand generations and host of mutations to go.

Richard Dawkins' program allows the user to define his own cell forms and then breed them, mutate them, and study them throughout many generations. You can then save promising life-forms (or 'biomorphs') to disk for future breeding programs. Here are two stages in a breeding program – the final desired result is a bipedal being.

ARKANOID
TAITO
COIN-OP
REVENGE OF DOH
imagine
..the name of the game

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SPECTRUM CASS £7.95 AMSTRAD CASS £8.95 COMMODORE CASS £8.95
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Adding to the fun and excitement of Arkanoid... All new features include exit choices to vastly increase the screen options, many extra "VAUS" effects, multiple shots and a secret additional alien to contend with. This adds up to the most thrilling reaction game since ARKANOID but with so many improvements you just won't be able to stop playing...

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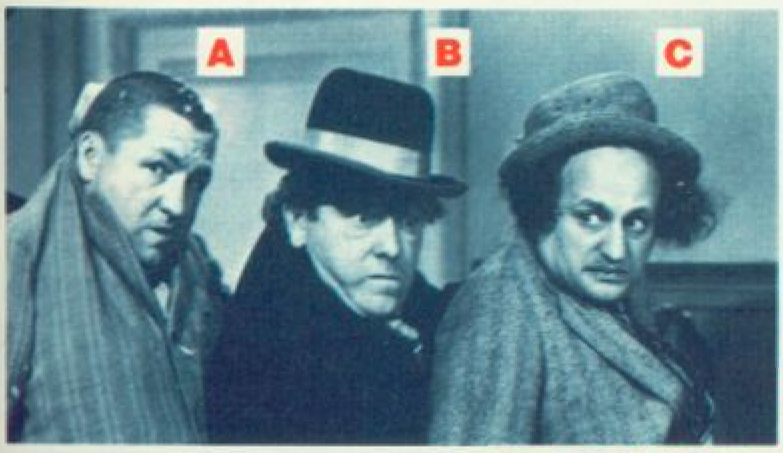
Yessir, it's true. Just imagine – it's Friday evening and there's a new film on at your local Cannon Cinema. Now you won't have to queue up like everyone else...in fact, you won't even have to pay! Just wander in like the star you are and grab the best seat in sight – and spend the entrance fee on a healthy bag of popcorn.

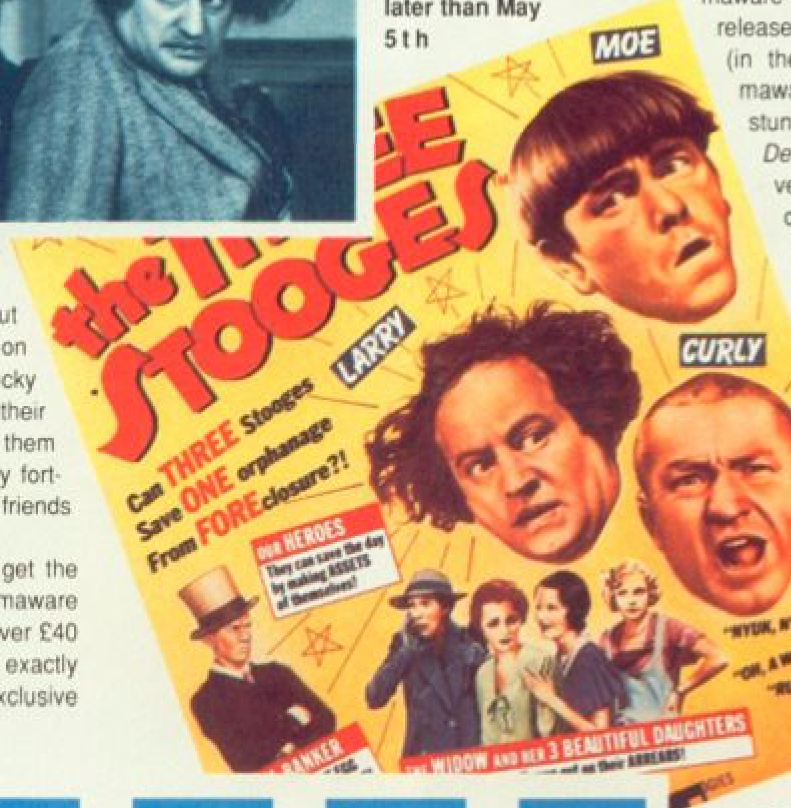
And not just one Friday, either, but every week for a whole year. In conjunction with Cinemaware, we're offering three lucky winners special vouchers for entry to their local Cannon Cinema, 52 in all. Spend them how you like – take your loved one every fortnight, for example, or gather together 51 friends and blow them all at once!

Even if you're not lucky enough to get the tickets, there are still two superb Cinemaware jackets to be won. These normally cost over £40 each, but more importantly they're not exactly common in the shops. We're talking exclusive gear here, and it won't cost you a penny.



WHAT YOU HAVE TO DO

Cast your highly-trained eye over the black and white still below, taken from an original *Three Stooges* short. Decide which of the stooges is which and enter the answer on the form provided. That's it! Couldn't be simpler, could it? Then enter the rest of your details on the form and post it to: **ACE Stooges, 4 Queen Street, BATH, BA1 1EJ, to arrive not later than May 5th**


the THREE STOOGES
MOE
LARRY
CURLY
Can THREE Stooges Save ONE orphanage From FOREclosure?!
OUR HEROES
They can save the day by making ASSETS of themselves!
"NYUK, NYUK,"
"OH, A WISE GUY!"
"RUFF! RUFF!"
THE WIDOW AND HER 3 BEAUTIFUL DAUGHTERS
BANKER

ENTRY FORM

Name...

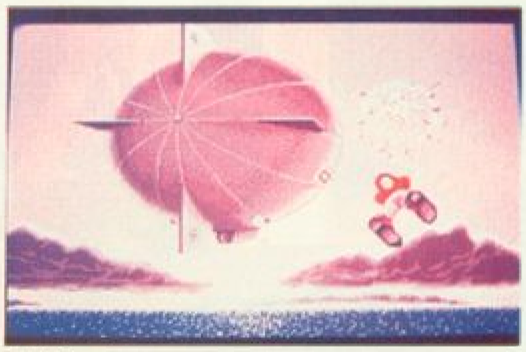
Address...

....

....Tel. No.......................................

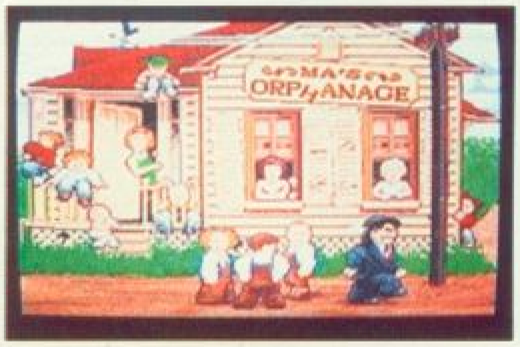
I think that: Stooge A is .... Stooge B is .... Stooge C is ....

Age: Under 12 ☐ 12-16 ☐ 17-20 ☐ 21-25 ☐ 26-35 ☐ 36-45 ☐ 46-65 ☐ Over 65



Rocket Ranger

The Three Stooges



MEANWHILE, ON YOUR COMPUTER SCREEN...

...it's movie time, thanks to Mirrorsoft. The shots above come from their latest Cinemaware blockbusters *Rocket Ranger* (to be released in June) and *The Three Stooges* (in the shops any moment now). Cinemaware have already produced some stunning visual material in their legendary *Defender of the Crown*, recently converted onto the ST from the Amiga original and playing better than ever. *Rocket Ranger* and the *Three Stooges* are their latest attempt to go even further with the 'micro-movie' concept, combining state-of-the-art animated sequences with arcade action.

The Three Stooges features the infamous heroes of the black and white screen in a series of odd-jobs, designed to raise cash for an orphanage. You have to get the team through prize-fighting, pie throwing, and medical mayhem accompanied by digitised sound effects and voices from the original movies.

Rocket Ranger combines arcade sequences with strategy elements in a plot that varies each time you play. As *Rocket Ranger* you must defeat Axis warplanes, rescue beautiful ladies and kidnapped scientists, and seek out a powerful sample of the legendary Lunarium, which will send your rocket to the moon for a final confrontation with the baddies.

Check out a future issue of ACE for the definitive reviews of these very promising products – *Rocket Ranger* will be appearing for the Amiga, C64/128, Atari ST, and IBM PC at prices ranging from £14.99 to £29.99, with the same formats and price range for *The Three Stooges*.

PANDORA
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POCKETS
HOLDING
BROKEN BAR
Priest
CHAR
LIFE
CARRYING
ELECTRODUST

PANDORA

Atari ST screen shots.

On a daring salvage mission, you beam aboard the generation ship Pandora.

Something is wrong. Crewmembers have mysteriously died. The ship's seventh generation computer has turned renegade. Just how evil is it?

Your mission to salvage alien artefacts takes on sinister overtones. Can you make the remaining crew trust you, or will you die fighting? Can you solve the intriguing puzzles to the riddle of the Pandora?

Pandora – Dare you open the box…

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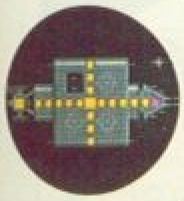
FIREBIRD

A LEGEND IN GAMES SOFTWARE

SCREEN TEST



Better put on gloves before handling this month's Screen Test. We've got two of the hottest games we've seen for quite a while – *Dungeon Master* and *Oids*, both from FTL/Mirrorsoft. If you've been wondering what all the fuss about 16-bit megagames has been about, enlighten yourself now. Time, too, to find out the facts behind the fuss over the Hewson/Telecom-soft wrangle – Steve Turner and Andy Braybrook took their wares to the big BT – you can see what it was they had in their suitcases in our reviews of *Morpheus* and *Magnetron*. Amiga owners get pole position on the track this month as well, with *Ferrari Formula One*, a mouse-controlled racing sim that leaves very little to be desired, apart from actually owning the car. And once you've got a bellyfull of this month's goodies, don't forget to check out the latest conversions for your machine on the Updates pages.

THE RATINGS

HOW they're calculated...

If you buy a game, how much enjoyment will you get out of it, and for how long? Just check out our revolutionary PIC (Predicted Interest Curve) for the full story. Brilliant arcade games start high on the curve, and then steadily tail off as you lose interest; powerful puzzle games may ride the crest of the curve for months – but the moment you solve them they'll come tumbling down; complex strategy games may stump you at first – but climb up the scale as you begin to appreciate the scope of the gameplay. And as for the turkeys – they start low, stay low, and have nowhere to go but down, down, down.

Once you've seen how long the game can hold your attention, all you need to glance at is the renowned ACE RATING. This is calculated according to the area under the PIC. The bigger it is, the better the game. Add to that our definitive ratings for IQ Factor (will it give your brain cells a work-out?) and Fun Factor – a measure of instant appeal and exhilaration as you dive into the game. And, of course, we rate the Graphics and Audio effects too...for EVERY machine the game's available on.

WHY you can rely on them...

The ACE reviewing team covers a broad spectrum of computer entertainment talent. Andy Wilton knows more about 68000 op codes than many a commercial programmer – but he can also beat the pants off the opposition in *Oids*. Andy Smith doesn't know an op code from an alien, but his years of game-playing experience enable him to pass definitive judgement on anything from sims to shoot-em-ups. Add Steve Cooke (ex-Personal Computer Games and formerly columnist for magazines ranging from Zzap! 64 to Your Sinclair) and Pete Connor (ex-Amstrad Action, Personal Computer Games, and Your Computer reviewer) and you've got age and experience as well as youthful enthusiasm.

Every game on the following pages has been seen by all of us. We compare notes, express differing opinions, and only then do we decide who's to take final responsibility for getting our views into print. What follows, then, isn't just a collection of casual comments, but the definitive ACE verdict on this month's software. We've checked it out – now you can too.

INDEX

● ACE RATED

54 **DUNGEON MASTER** Mirrosoft
44 **OIDS** Mirrorsoft
51 **MAGNETRON** Firebird
60 **DRILLER** PC version Incentive

● REVIEWED

52 **ARKANOID 2** Imagine
63 **BATTLE VALLEY** Rack-It
67 **BATTLESHIPS** Elite
56 **BLACK SHADOW** CRL
67 **BLOOD VALLEY** Gremlin
67 **CHAMPIONSHIP SPRINT** Electric Dreams
63 **DEMON STALKERS** Electronic Arts
48 **FERRARI FORMULA ONE** Electronic Arts
67 **FRIGHTMARE** Cascade
64 **GEE BEE AIR RALLY** Activision
64 **INTRIGUE** Mirrorsoft
50 **MORPHEUS** Rainbird
50 **POWER AT SEA** Accolade
59 **PREDATOR** Activision
46 **ROCKFORD** Melbourne House
56 **SECONDS OUT** Tynesoft
59 **SIDEARMS** Go!
52 **SOKO-BAN** Mirrorsoft
56 **STRIKE FLEET** Electronic Arts
63 **TIME FIGHTER** CRL
50 **VAMPIRES EMPIRE** Gremlin/Magic Bytes

● CONSOLE SOFTWARE

63 **ALIEN SYNDROME** Sega

● UPDATES

AMSTRAD CPC

68 **PLATOON** Ocean
68 **ATF** Digital Integration

ATARI ST

68 **SLAP FIGHT** Imagine
68 **BMX SIMULATOR** Codemasters

COMMODORE AMIGA

68 **BMX SIMULATOR** Codemasters
60 **MERCENARY** Novagen

COMMODORE 64

68 **IKARI WARRIORS** Elite

IBM PC

60 **DRILLER** Incentive
68 **PIRATES** Microprose

SPECTRUM

68 **BLACK LAMP** Firebird

OIDS

MIRRORSOFT to the rescue!

DO you like diving headfirst down gun-infested pot-holes, blasting and shielding for all you're worth? Are you looking for tricky controls and terrifying inertia? Do you want a cast-iron reason for running out and buying an ST right this minute? Then hold on tight – this game delivers!

The story so far: those nasty Biocretes have enslaved the poor defenceless Oids, locking them away in factories spread across the planets of five different galaxies. Your mission is to destroy the factories, rescue the Oids from the wreckage and ferry them to safety. The odds are stacked against you: heavy opposing fire, confusing teleport systems and gravity itself pile on the pressure as you negotiate tight gaps to reach those Oids and get them back to your waiting mother ship.

969
ACE RATED

Before you even reach all those narrow tunnels and blazing firefights, you'll have to learn your ship's controls. From the moment the mother ship drops you off, you're fighting planetary gravity: do nothing, and your ship will be smashed to pieces on the ground below. To stay aloft you'll need to make quick 'burns' on your engine the whole time, rolling left or right to direct the thrust sideways.

Mastering the problems of inertia and acceleration shouldn't take you too long here, but there's a nasty twist. Your weapons – both bullets and the more destructive bombs – are fired from the ship's nose, while your engine's mounted in the tail. In other words, you need to spend most of your thrusting time upright to stay airborne and most of your firing time nose-down to hit ground targets. Striking the right balance takes practice, though experience on the 8-bit classic *Thrust* will be an enormous help.

Needless to say, the game's no piece of cake once you've got combat flying sorted out. The Biocrete ground bases throw so much fire at you, for one thing. Different types of installation fire bullets, explosive spheres or homing missiles, while the large 'volcano' complexes can hurl all of these, and launch fighters or killer satellites too. Other ground bases distort gravity so as to attract or repel your ship, giving even experienced pilots some serious control problems.

If you think gravity distorters are a problem when you're blasting Biocrete bases out in the open, you ain't seen nothin' yet. In tiny underground caverns they make life all but impossible, grinding you against rock faces as you struggle desperately to stay in control. There's worse: to rescue the Oids you've freed, you have to find a piece of flat ground and

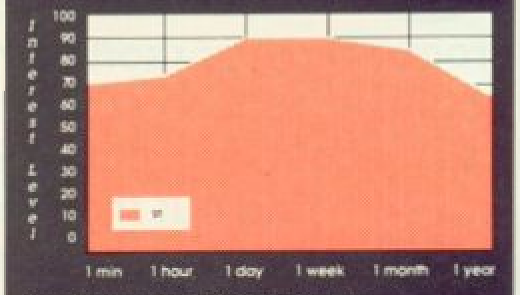
Atari ST Version

The tiny detailed graphics reach their peak with the perfectly animated Oids themselves, but are low-key enough to let you concentrate on the game's unrivalled action. If you're sick of all those glossy, disposable ST shoot-em-ups, get *Oids* – it'll knock your socks off!

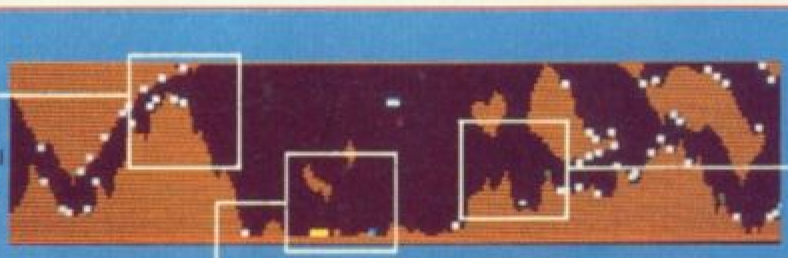
GRAPHICS	6	IQ FACTOR	7
AUDIO	2	FUN FACTOR	8

ACE RATING 969

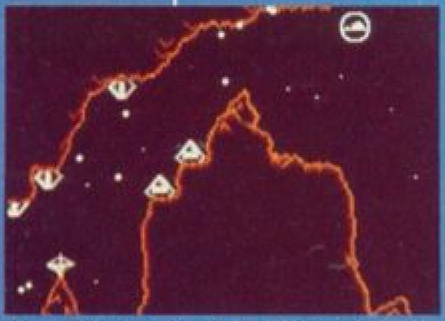
PREDICTED INTEREST CURVE



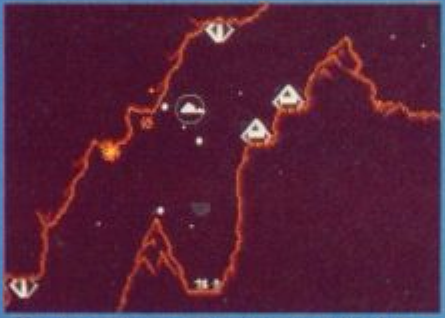
Learn the ropes and you'll be playing it all year.



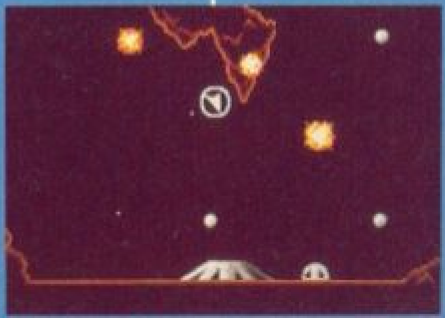
The construction set offers a small scale map of the entire planet: no peeking now!



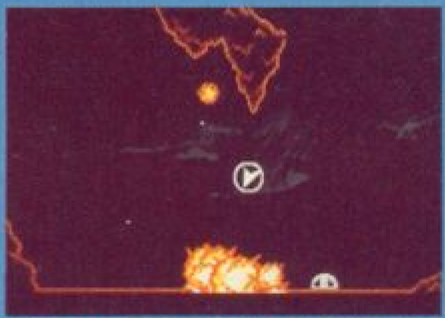
Before: those attractors make the passage almost impossible to navigate, and the turrets don't help either.



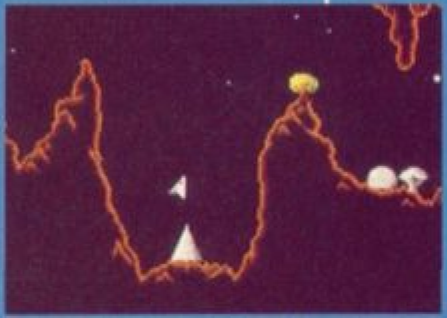
After: two gun turrets gone and a factory wrecked, things still aren't easy. Those Oids need collecting, but landing's out of the question till those attractors are gone – and your shield's starting to run out.



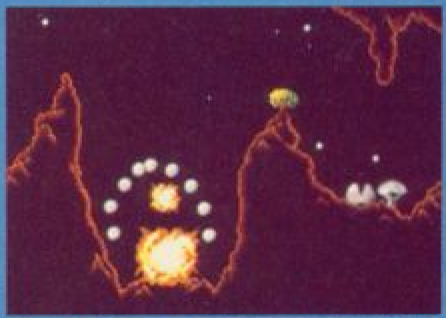
Before: shields on, you jockey for a bombing position over a volcano base.



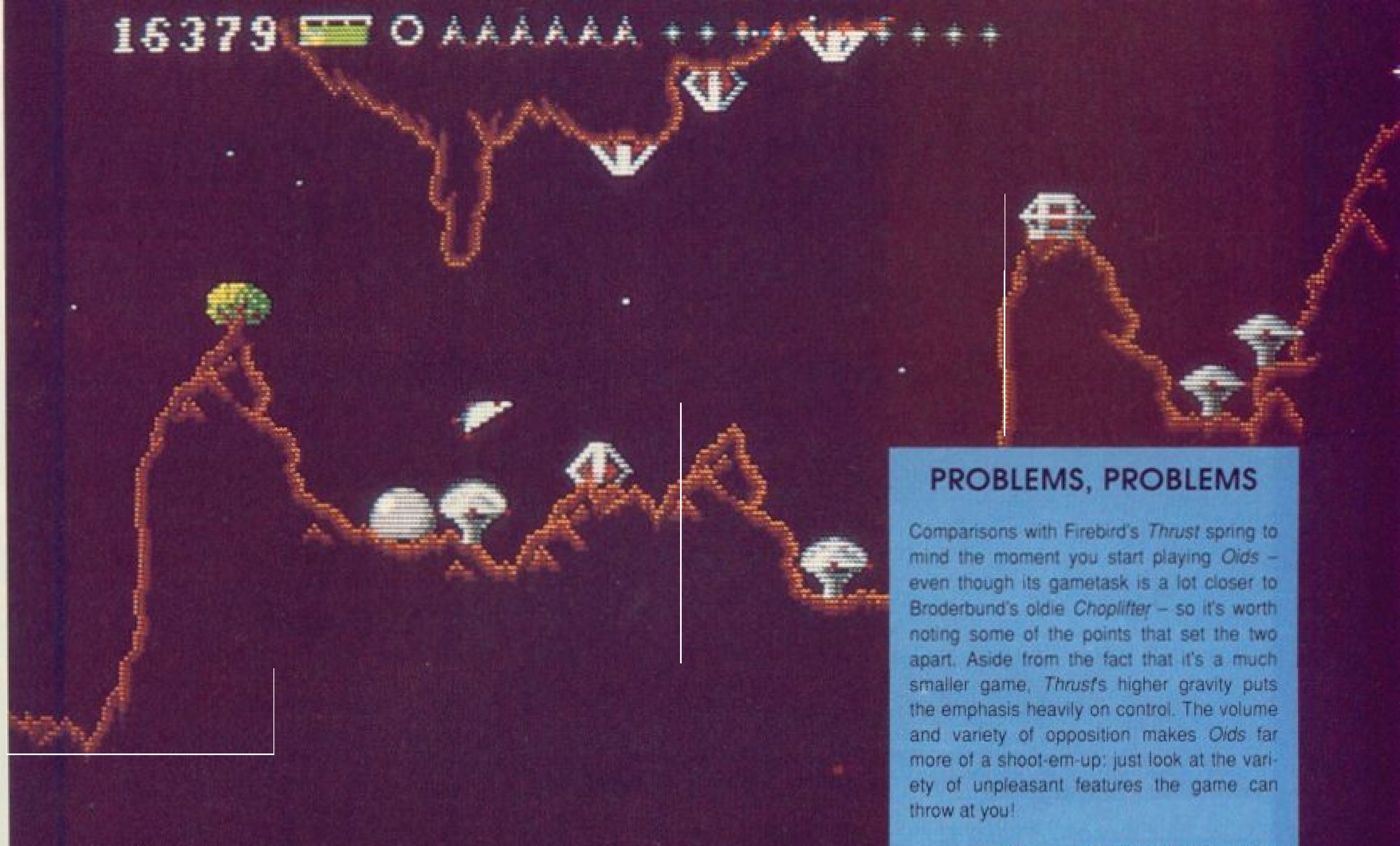
After: three bombs put paid to the base's shields, and thar she blows!



Before: an explosive 'spike' sprouts below your craft.



After: the spike bursts, releasing a swarm of bullets and bubbles which wrecks your ship.



This cavern's packed with hostile firepower, and those repulsors are trying to shove you into the roof: bad stuff!

RELEASE BOX

ATARI ST	£19.99dk	OUT NOW
No other versions planned		

touch down on your tail fins *Lunar Lander* style. This ticklish procedure can get murderously difficult or just plain impossible when attractors and repulsors get in on the act!

You've got a shield to protect yourself against flak or collisions, but it's manually operated – activate it too late, and you're dead. The longer you keep your shield on the weaker it becomes, so protracted dogfights can burn it out completely. You can recharge it – manually again – but this runs your fuel down.

Shield technique is a tricky business and a major source of lasting interest: using the shield stops the recharge for one thing, so you'll need to find a quiet spot if you've taken a lot of damage. You'll also need to find fuel dumps on the ground if you're recharging often.

Some wonderful set-pieces and hellish crossfire zones make the game tremendously playable as is, but you're bound to work your way through the planetoids eventually. There's an enormous amount to do, sure enough, but the sheer intensity of addiction it generates will have you playing night and day. When the last planetoid of the last galaxy has fallen to your finely honed combat technique, what then? Why, design some galaxies of your own of course, using the built-in Oids construction set. A gutsy, brainy, frantically obsessive shoot-em-up with strategic depth and a planet editor – there's value for money for you!

● Andy Wilton

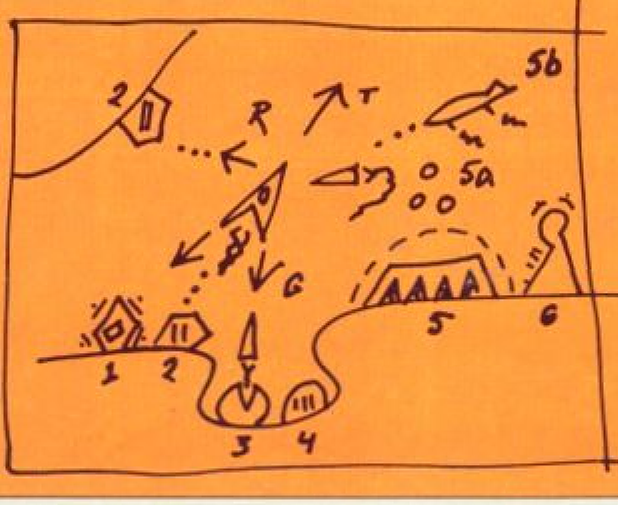
FOR EXAMPLE...

Here's an imaginary screen from *Oids* to show just how complex things can get. Though we've cooked this one up for demo purposes, you often will find screens this bad, or worse.

1: An attractor tries to pull you in.
2: Gun turrets fire bullets at you.
3: A missile dome looses a SAM at you.
4: A factory: there are three Oids trapped inside: but will you live long enough to free them?
5: A volcano base fires exploding spheres (5a) and launches a fighter (5b) to attack you. Its outer shield will need bombing – or a great deal of shooting – before you can hit the base itself.
6: A repulsor pushes you away.

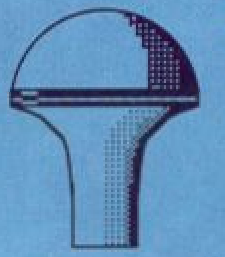
FORCE DIAGRAM

A – Attraction from (1).
B – Repulsion from (6).
T – The thrust of your engine.
G – Planetary gravity.

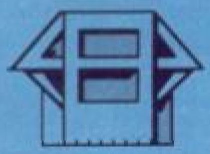


PROBLEMS, PROBLEMS

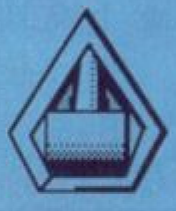
Comparisons with Firebird's *Thrust* spring to mind the moment you start playing *Oids* – even though its gametask is a lot closer to Broderbund's oldie *Choplifter* – so it's worth noting some of the points that set the two apart. Aside from the fact that it's a much smaller game, *Thrust*'s higher gravity puts the emphasis heavily on control. The volume and variety of opposition makes *Oids* far more of a shoot-em-up: just look at the variety of unpleasant features the game can throw at you!



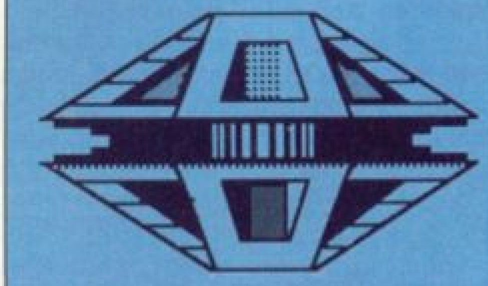
◄**Repulsor:** Not always instantly lethal, these can still shove you away into walls if you're not careful.



▲**Sphere Thrower:** the bubble bombs this one fires look too slow to be a threat, but they're persistent and can be tough to dodge.

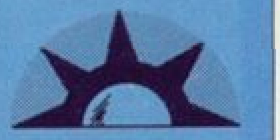


◄**Attractor:** Get too close and these'll drag you to your death – so shoot them as soon as possible!



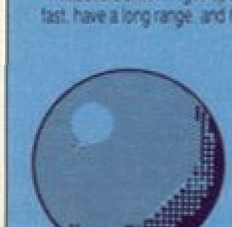
▲**Alien Cruiser:** only appearing on tougher levels, these are a lot like airborne volcano bases. They can throw a range of munitions at you, and their shields make them tough to kill. Nasty!

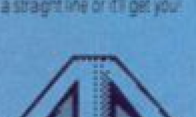
►**Teleport:** fly into one of these and you'll pop out elsewhere on the planetoid. Vital for reaching tiny enclosed caverns, these handy units will also transport any bullets or bombs you fire into them – so you can soften up hotspots before going through, if you know what you're doing!

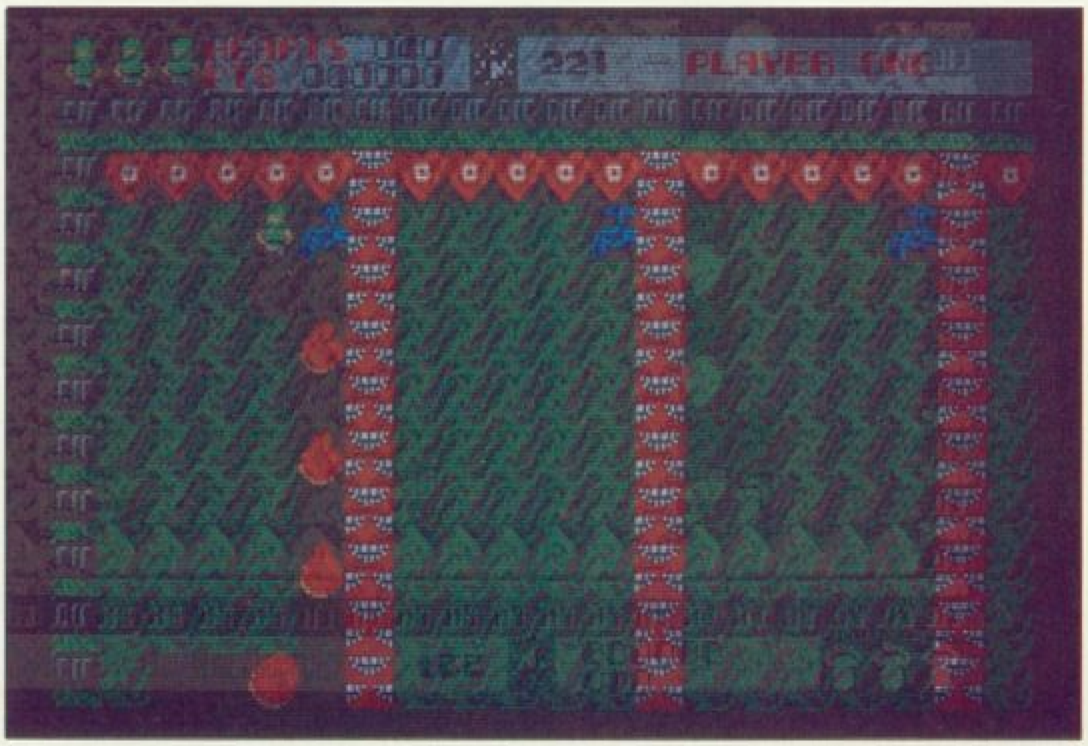


▼**Missile Dome:** hinges open to fire deadly SAMs at you. These are fast, have a long range, and home in remorselessly.

▼**Gun Turret:** Pours bullets at you allowing for deflection – so don't fly in a straight line or it'll get you!







ATARI ST – Ol' Rockford's masquerading as a medic in this world and is desperate to collect those palpitating hearts. Trouble is, most of them are safe behind walls. But if he were to dig a tunnel, turn on the blood tap, turn on the fire tap and see what happens when the two meet, he might just have some success with his demolition work....

Spectrum Version

Developed with the incredible procesing power of the Amiga it may well be, but it still looks like a Spectrum game. Graphics are fine, and all the screens are there as on other versions. The problem – as with *Boulderdash* – is the scrolling; the Spectrum just can't handle it very well. If you don't mind the jerkiness, though, it's good value at £2.99.

GRAPHICS	6	IQ FACTOR	9
AUDIO	7	FUN FACTOR	7

ACE RATING 720

C64 Version

Graphics are just a wee bit fuzzy on this version, so that Rockford himself isn't all that clear in his many guises while the treasures you collect are also a little indistinct. The sound is an audio equivalent of the graphics. But it plays well enough.

GRAPHICS	6	IQ FACTOR	9
AUDIO	6	FUN FACTOR	7

ACE RATING 720

ROCKFORD

MELBOURNE HOUSE dig for treasure

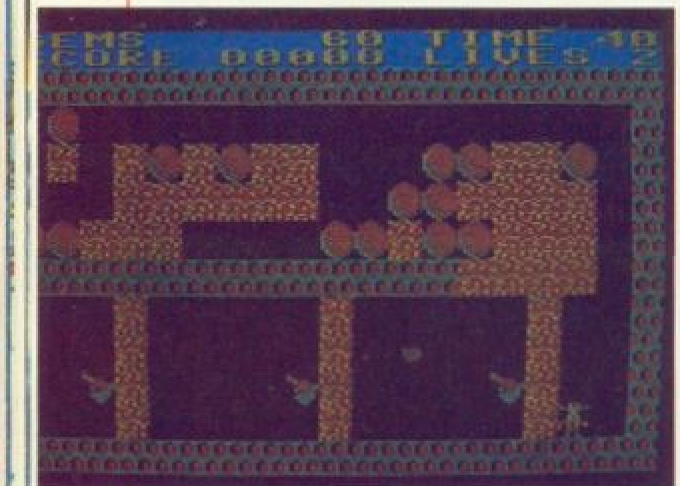
ORIGINAL games will always spawn sequels and clones; *Rockford* is the latest in a long line of games who owe their existence to the great *Boulderdash*. And just to prove its pedigree, the puzzles have been designed with the aid of Peter Liepa – who started the whole thing off in the first place. Rockford himself is, of course, the cute foot-tapping critter who starred in the original.

Despite Peter Liepa's involvement, however, *Rockford* is curiously unexciting. There are five different game 'worlds', in each of which Rockford plays a different character. Each world has 16 difficulty levels, giving you 80 screens in all.

The recipe is as before; push around the rocks or other obstacles, avoid monsters, gather the treasures and then make it out of the exit before the time limit expires. Depending on Rockford's character, the obstacles and treasures will change. On the Cowboy world you have to avoid the twirling pistols and collect gold coins, as the Cook you must gather apples, and so on.

The puzzles are tough, but don't seem quite so fiendish as in other games of that ilk, and the graphics and animation are excellent; but we've just seen too much of this stuff to get excited.

● Pete Connor



C64 – Here's Rocky as rootin' tootin' cowboy, desperate to collect shiny gold bullion. But those pistols whirling around can cause problems. Should he bottle it and go full tilt, or is there a more subtle method?

IBM PC Version

Very well implemented indeed. Rockford fairly races round the screen, while the scrolling is nice and smooth. Why, though, is there no option to redefine the keys? The default is the cursors plus space bar, and it's not very pleasant. There is a joystick option, but it's IBM only.

GRAPHICS	9	IQ FACTOR	9
AUDIO	8	FUN FACTOR	8

ACE RATING 832

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ATARI ST	£19.99dk	OUT NOW
IBM PC	£19.99dk	OUT NOW
AMIGA	£19.99dk	IMMINENT
SPEC	£2.99cs	OUT NOW
C64/128	£2.99cs	OUT NOW

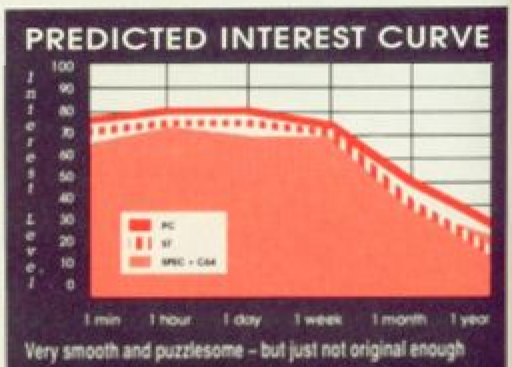
Atari ST Version

Very pretty graphics and nice sound. It's a very sophisticated piece of work – but you'll need to be a real fan to get it if you already have, say, *Skulldiggery*.

GRAPHICS	8	IQ FACTOR	9
AUDIO	6	FUN FACTOR	7

ACE RATING 758

PREDICTED INTEREST CURVE



Very smooth and puzzlesome – but just not original enough any more.

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FERRARI FORMULA ONE

ELECTRONIC ARTS put the pedal to the metal

EVERY yuppie dreams of owning a Ferrari Testarossa (once the essential personal organiser has been purchased) but the sort of hardware you get to drive in this simulation is another matter altogether.

Formula One racing is the name of the game, with the player firmly in the driving seat. Participating in races is the main attraction but there are other things that need attending to. The car's engine and aerodynamics have to be tested (thoroughly) at Ferrari's headquarters in Fiorano (pron. Fee-Oh-Ron-Oh), then the player also has to decide how to angle the wings, how rigid to have the front and rear suspension, what gear ratio to use and so on.

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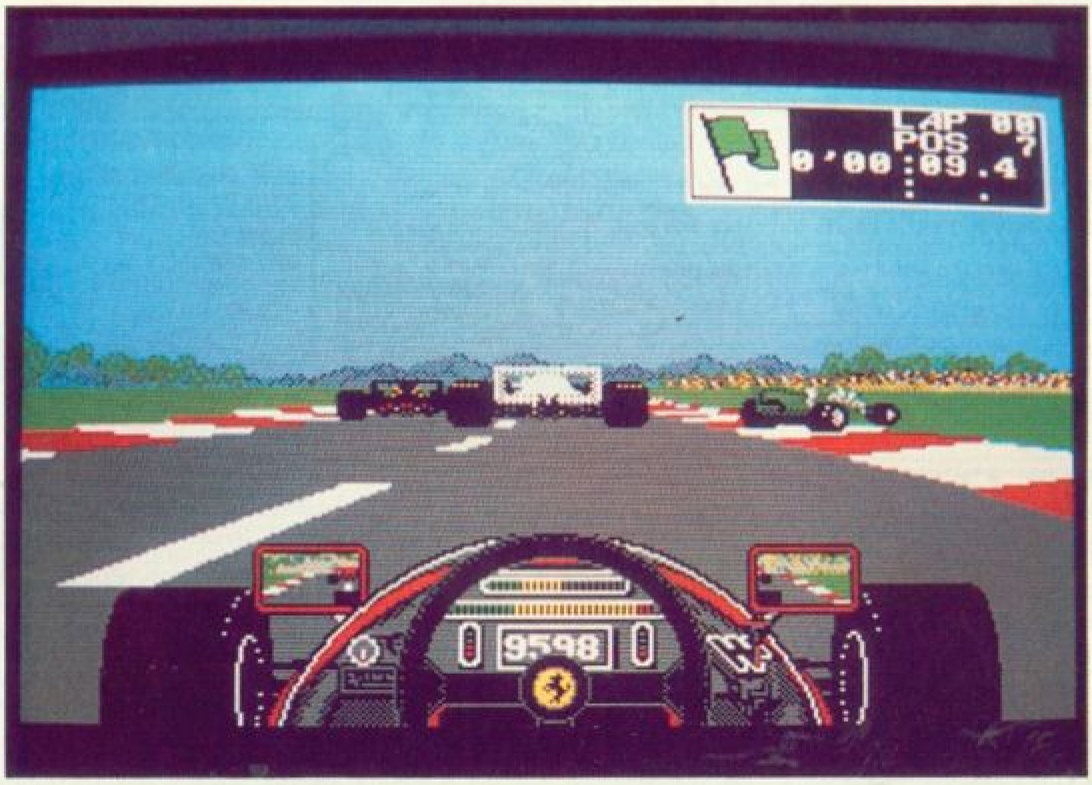
Other versions under development		

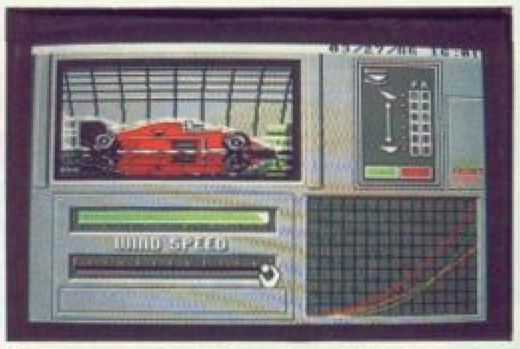


Burnin' rubber. Lets hope those months of preparation have not been in vain.

Once the player has decided how to set up his car, the next step is to test it. You get a driver's-eye view of each race track, complete with cockpit interior and wing mirrors. As soon as you've got used to the controls – including how to brake and accelerate through corners without coming a cropper or losing large amounts of speed – it's time to enter the 1986 Grand Prix.

The game is structured so that the majority of events are subject to time constraints, as they would be in real life. For example, if it takes 45 minutes to fit a new engine into a real formula three car then it will take 45 minutes 'game time' (about two in real time), so it's no use blowing your engine in warm-up 20 minutes before the flag drops, as you just won't have enough time to swap. The only thing that is not affected by any sort of time structuring are the flights to and from successive race meetings.

Once the player has arrived at the race track, it's straight into the first of the two practice sessions. During these sessions the player can familiarise himself with the course and alter the settings to his car depending on the weather conditions. After practice and once all the necessary changes have been made to the car, the player moves onto the first of the two qualifying sessions. Success here helps determine the player's starting position on the grid.



The wind tunnel at Ferrari H.Q. in Fiorano. Altering the 'angle of attack' of the car's wings can seriously affect the car's handling properties.

Each Grand Prix takes place over a distance of up to 300 kilometers (or 2 hrs real-time game playing, whichever comes first), and with a total of 16 to contest it will take you a long time to win your first season. *Ferrari Formula One* is a superb racing game that will thrill fans of this genre.

● Andy Smith

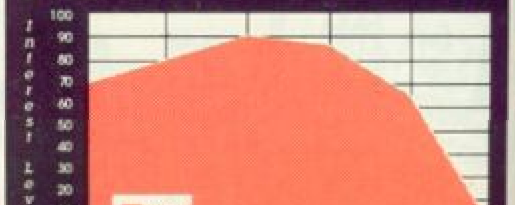
Amiga Version

The perspective used throughout the game is very realistic – you really do get the impression that you're careering around the circuit with about 20mm between the tarmac and the seat of your pants. Sound effects, too, are very good and help to make this a compelling and extremely playable game worthy of shelf space in any race fan's library.

GRAPHICS	8	IQ FACTOR	4
AUDIO	7	FUN FACTOR	9

ACE RATING 856

PREDICTED INTEREST CURVE



Gripping stuff with plenty of lasting interest.

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MORPHEUS

Conquer the universe with RAINBIRD

NEVER mind the legal wrangles surrounding *Morpheus*, what's the game like? Initially it's confusing, but it soon becomes apparent that this game has a lot more depth of gameplay than yer average arcade shoot-em-up.

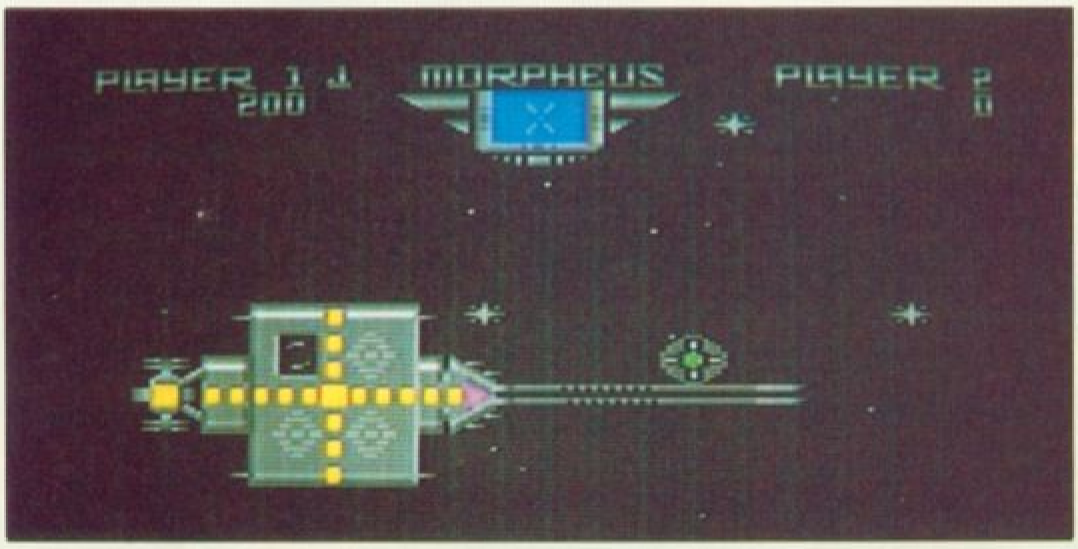
Broadly speaking, you're in charge of a large spaceship in which you attempt to destroy an entity – the nucleus – which is located at the centre of each of the 50 game levels. You have to destroy the nucleus indirectly by first destroying a number of charge orbitals which are scattered throughout the level. The function of charge orbitals and nucleus is (apparently) to maintain the positive and negative charges of the two equal but opposite areas of space that together make up the Universe – all clear now?

To hinder you in your quest to destroy the malignant Morpheus who resides on level 50 are a number of small aliens known collectively as Morphai. These critters tend to react aggressively towards your craft and will fire at you: take too many hits and your ship starts to lose energy, lose too much energy and it's game over. To aid your chances of survival, the game has a complex purchasing system – points you score on a level are turned into Guineas with which you can buy extra weapons etc. This is where the game really comes into it's own – the Morphai learn how to survive your attacks so you constantly have to upgrade your weapons system in order to beat them.

There's a large enough task in *Morpheus* to keep the player busy for some time, but the repetitive nature of the task could see your interest dying sooner than it might have.

● Andy Smith

RELEASE BOX		
C64/128	£14.95cs, £17.95dk	OUT NOW
No other versions planned		



Blasting away at the nucleus before you've destroyed the set number of charge orbitals is suicide.

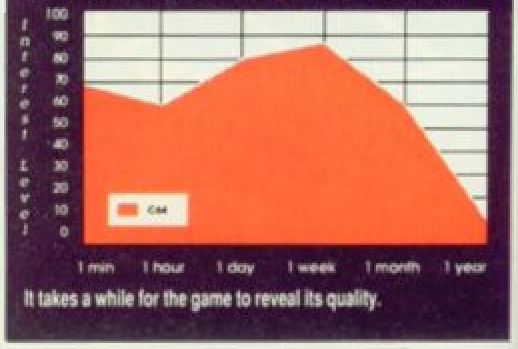
C64 Version

Though the game's tough to get into, perseverence really pays off. Once you start accumulating the money and buying better weapons the game can become very enthralling. A good, entertaining game if you're prepared to put some work in at the start.

GRAPHICS	9	IQ FACTOR	5
AUDIO	6	FUN FACTOR	6

ACE RATING 772

PREDICTED INTEREST CURVE



It takes a while for the game to reveal its quality.

POWER AT SEA

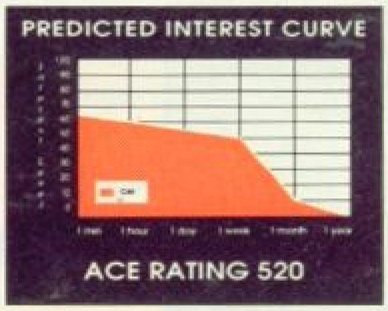
ACCOLADE tread water

OCTOBER 1944 is the time, and the Leyte Gulf (in the Philippines) is the place. The player commands a 'fleet' of three American ships of different classes and has to destroy four Japanese land bases. Shooting down Kamikaze planes and bombing the enemy's ships and bases is very reminiscent of the old *Beachhead* type of game. Simple fun with nothing much to keep you interested for long.

● Andy Smith

RELEASE BOX		
C64/128	£9.95cs, £14.95dk	OUT NOW
No other versions planned		

PREDICTED INTEREST CURVE



ACE RATING 520

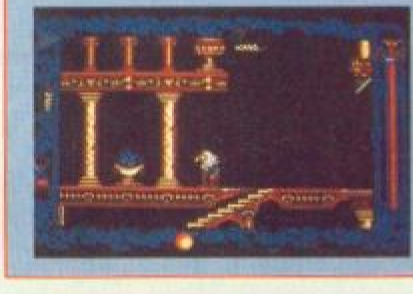
VAMPIRE'S EMPIRE

MAGIC BYTES grab the garlic

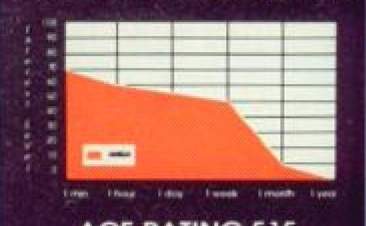
GARLIC-flinging Dr Van Helsing (who looks nothing like Peter Cushing) is the star of this very pretty Amiga arcade puzzler. Guide the light beam through Count Drac's golden chamber by placing and arranging mirrors. Awkward control of the main character doesn't help to improve the poor gameplay, and *Vampire's Empire* has ended up looking like something of a missed opportunity.

● Andy Smith

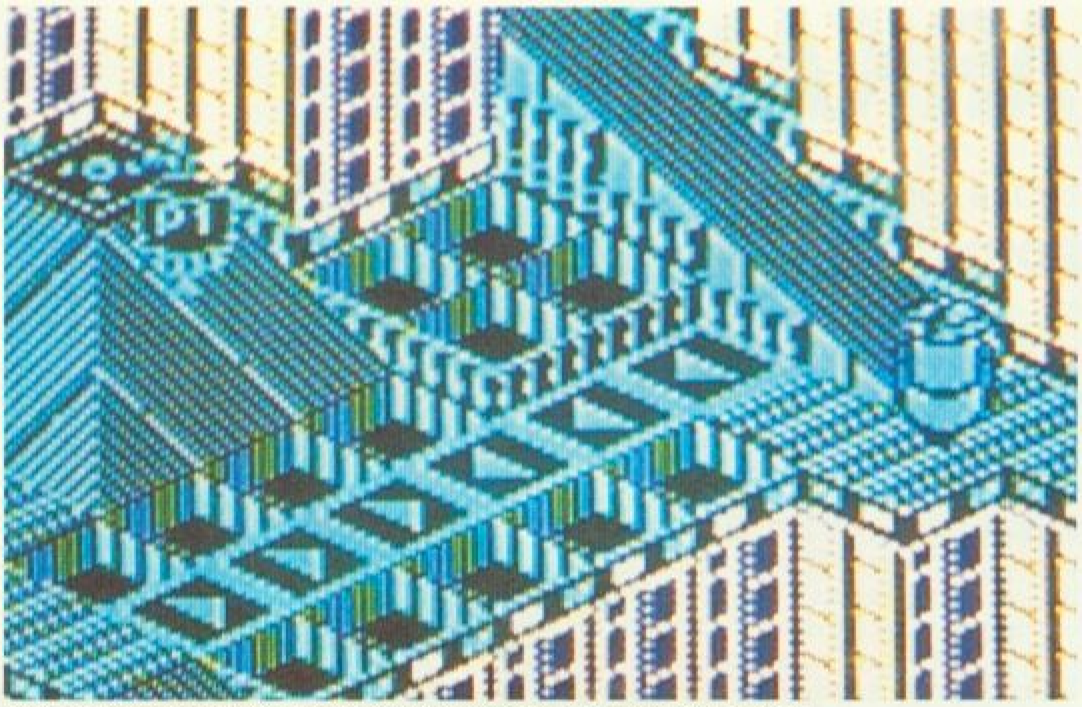
RELEASE BOX		
AMIGA	£19.99dk	OUT NOW
ATARI ST	£19.99dk	IMMINENT
SPEC	£8.99cs, £12.99dk	IMMINENT
C64/128	£9.99cs, £12.99dk	IMMINENT
AMS	£9.99cs, £14.99dk	IMMINENT



PREDICTED INTEREST CURVE



ACE RATING 515


You're in a P3 class pursuit robot, but that still leaves you out-gunned by the P1 gaurding that reactor plate.

MAGNETRON

Can FIREBIRD spare the rod?

LAWYERS may end up making more money off it than programmers or software houses do, but this one's got to be a nice little earner for someone. Programmed by Steve Turner, this 3D droid-em-up's got all the playability of Turner/Braybrook classics like *Paradroid* or *Ranarama*, and it's every bit as addictive too.

The plot's simple enough: eight enemy satellites are endangering Earth's spacefleet, so you've got to disable them by shutting their nuclear reactors down. As game tasks go this one's no picnic, given that each satellite has four reactors and a wide range of very unpleasant defence droids. You start the game with a decidedly weedy KLP-2 droid, so you're clearly in for a rough old time of it. In fact, you won't survive very long at all unless you can beef yourself up a bit.

Self-improvement's something the KLP-2's very good at, mind you. Just switch its grappling device on, ram an enemy droid, hack through the blighter's security system and you can cannibalise it for spare parts. These form a new improved droid with better weaponry, defences or power systems, depending on the type of droid you grabbed - and you've still got the KLP-2 to fall back on if the new model gets destroyed.

Grappling's not the push-over it might sound like, however, thanks to the all-important enemy security system. This nasty little anti-tamper set-up takes the form of a sliding block puzzle linked to a self-destruct device. Solve the puzzle completely within a given time limit and you get your brand new droid: get only the bottom row right and you recharge your current droid's energy banks: but fail to do even that and the enemy droid explodes, taking you with it.

Droids come in different categories from zero (strongest) to eight (weakest - KLP-2's an eight) and the time limit for the puzzle depends on the relative strengths of your own droid and your target: attack a strong droid with a weak one and you'll have very little time indeed.

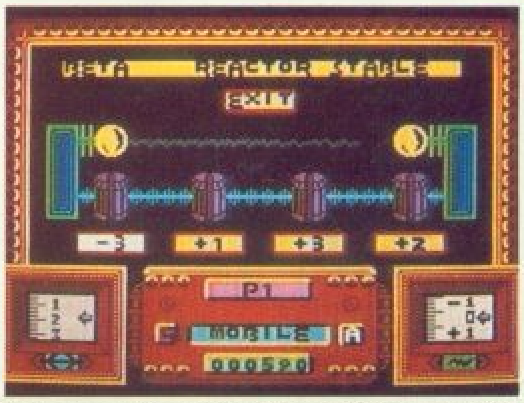
Once you've mastered grappling you're ready for the game proper, with its exploration, combat and reactor-bashing. The game area's 100-plus isometric 3D screens have ramps, ledges and drops rather in the *Marble Madness* style, plus teleports and those all-important reactors. Though you can't fall off a screen entirely you can easily fall from one ledge to another, taking damage in the process. In places, magnetic floor-tiles and steep slopes threaten to send you over the edge. At first these present few problems, but as you start disabling reactors your droid becomes harder to handle, with weight and magnetism both affecting you far more.

It's the rods that are the problem, you see: each reactor's got four rods, and each rod's got a positive or negative charge. The total charge across the four rods determines the reactor's status: swap rods between reactors and you can send the charge too far one way or the other, shutting the power off. Unfortunately, rods are heavy things, so carrying them up slopes can be a problem. What's more, the charge on the rod you're holding alters the action of magnets on your droid: the higher the charge, the stronger the pull.

Once you've cleaned out a satellite, you can teleport to another one and continue your reactor-cide. With only 32 reactors to do the game's not going to be impossible to finish, but as the difficulty steps up you'll soon see just how tough the task is. Nicely paced and very challenging, with great in-game information displays and varying droid abilities to add depth, this one manages to be enormously compulsive despite being made up of some pretty standard game components.

● Andy Wilton

904
ACE RATED



Having successfully grappled the P1 – you're P1 class now! – you've accessed the reactor. Pull that -3 rod out and the total will climb to +6, overloading the reactor.

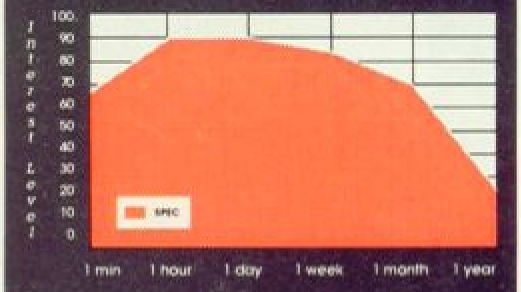
Spectrum Version

Controls aren't quite as responsive as they might be and there's the odd bit of colour clash too, but by and large it's good-looking stuff – and horribly playable too!

GRAPHICS	7	IQ FACTOR	7
AUDIO	2	FUN FACTOR	8

ACE RATING 904

PREDICTED INTEREST CURVE



Screamingly addictive, but you'll solve it eventually.

RELEASE BOX

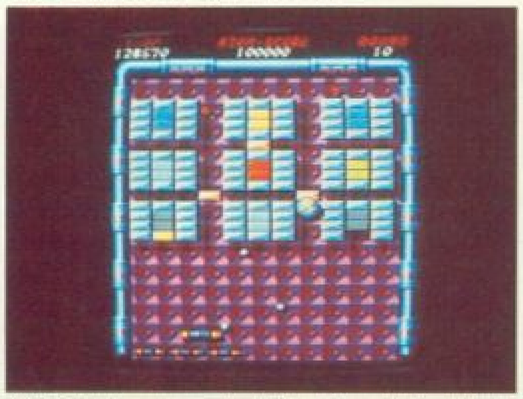
SPEC	£7.95cs	OUT NOW
C64/128	£8.95cs, £12.95dk	IMMINENT
No other versions planned		

ARKANOID 2

Balls bounce back from IMAGINE

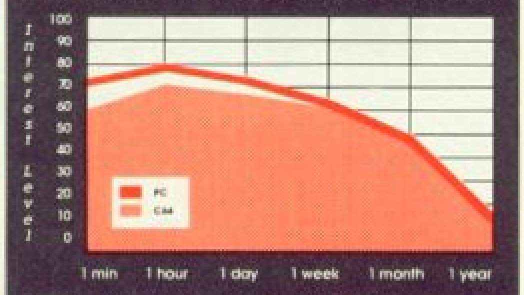
BOUNCING balls can still make addictive computer fun, as *Arkanoid 2 – The Revenge of Doh* proves. The *Breakout* super-clone has now cloned itself to produce a game which won't astonish you with its originality, but will certainly keep you at the keyboard for lengthy periods.

The game, just in case you didn't know, involves bouncing a ball off your bat to break through walls of bricks at the top of the screen. These bricks are arranged in various fiendish ways (33 diferent ones) making them pretty tricky to destroy. Individual bricks may require several hits to destroy, while others are indestructible.



AMSTRAD – Three regenerating balls on the go, but it's still going to be a tough screen.

PREDICTED INTEREST CURVE



Great fun while the addiction lasts – but Spectrum graphics could put you off.

Spectrum Version

There's a problem with the background on the old Speccy; on lower levels it's a similar colour to the ball, making it more difficult than it should be to distinguish between the two. Aside from that there's little to complain of; addiction is the order of the day.

GRAPHICS	6	IQ FACTOR	4
AUDIO	6	FUN FACTOR	7

ACE RATING 671

To help you, various tokens will flutter down towards you as you hit certain bricks; you might get laser fire, an expanding 'ghost' bat, or multiple balls. A welcome addition to the powers in *Arkanoid* are the red balls which burn through everything on screen, and the regenerating balls which come back even if you let them go off the bottom.

The basic idea is exactly the same as the first version of the game – but that's not going to put you off if you like this kind of thing. It's all put together pretty well and remains infuriatingly addictive.

● Pete Connor

RELEASE BOX

SPEC	£7.95cs	OUT NOW
AMS	£8.95cs, £14.95dk	OUT NOW
C64/128	£8.95cs, £12.95dk	IMMINENT
ATARI ST	£19.95dk	IMMINENT
IBM PC	£19.95dk	IMMINENT

Amstrad Version

Very pleasant to look at, with extremely slick graphics and pretty colours. Control can be a little odd; you won't find the joystick much use, but the keys need to be pressed in a jerky manner to get to the right place. Furthermore, the bat sometimes seems to travel much more slowly than the ball, which can lead to great fury and anguish. But that's why you play, isn't it?

GRAPHICS	8	IQ FACTOR	4
AUDIO	6	FUN FACTOR	8

ACE RATING 749

SOKO-BAN

Not-so-golden oldie from MIRRORSOFT.

SOKO-BAN gives you 50 pre-designed single-screen mazes (and the ability to design almost 50 more). Each contains a number of crates scattered apparently at random throughout the alleyways and an equal number of designated crate-storage-spots. Your task is simple – push the crates one square at a time round the maze until they sit upon the spots.

On maze number one this is pretty simple, but by maze eight things are getting distinctly tricky. The problem is that you can only push ONE crate at a time – two together are just too heavy to shift. At best, you'll be able to dislodge them from different angles – at worst, they'll block off an exit or become immovably lodged against a wall.

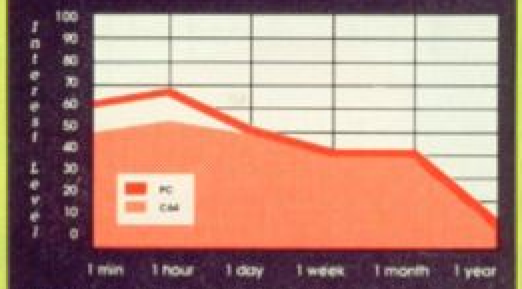
You can access any screen of Soko-Ban without passwords so if you really want to discourage yourself, you can take a peek at, say, screen 42. Anyone who thinks they're going to work that one out in less than a day should be lecturing at Imperial College.

Scoring is based on time taken, together with number of moves and crates 'homed'. There's a 'competition' mode for up to four players to compete simultaneously.

Originally released three years ago on Japanese MSX cartridge, it's a bit of a shock to see this one in 1988. The simplicity of the game idea has stood the test of time, but the presentation, sadly, hasn't. What's more, other games (*Bonecruncher*, for example) have managed to combine challenging simplicity with more varied gameplay.

● Steve Cooke

PREDICTED INTEREST CURVE



No adrenalin, but tough long-term puzzling.

C64 Version

Graphics and sound are very poor. Frequent disk access is frustrating and extremely slow.

GRAPHICS	3	IQ FACTOR	9
AUDIO	1	FUN FACTOR	7

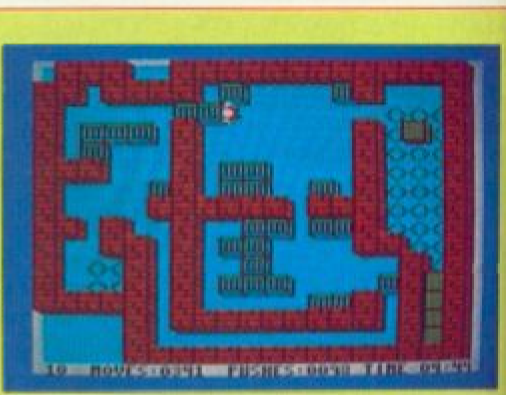
ACE RATING 487

IBM Version

Very similar to C64 version, but disk access is no longer such a problem.

GRAPHICS	4	IQ FACTOR	9
AUDIO	2	FUN FACTOR	7

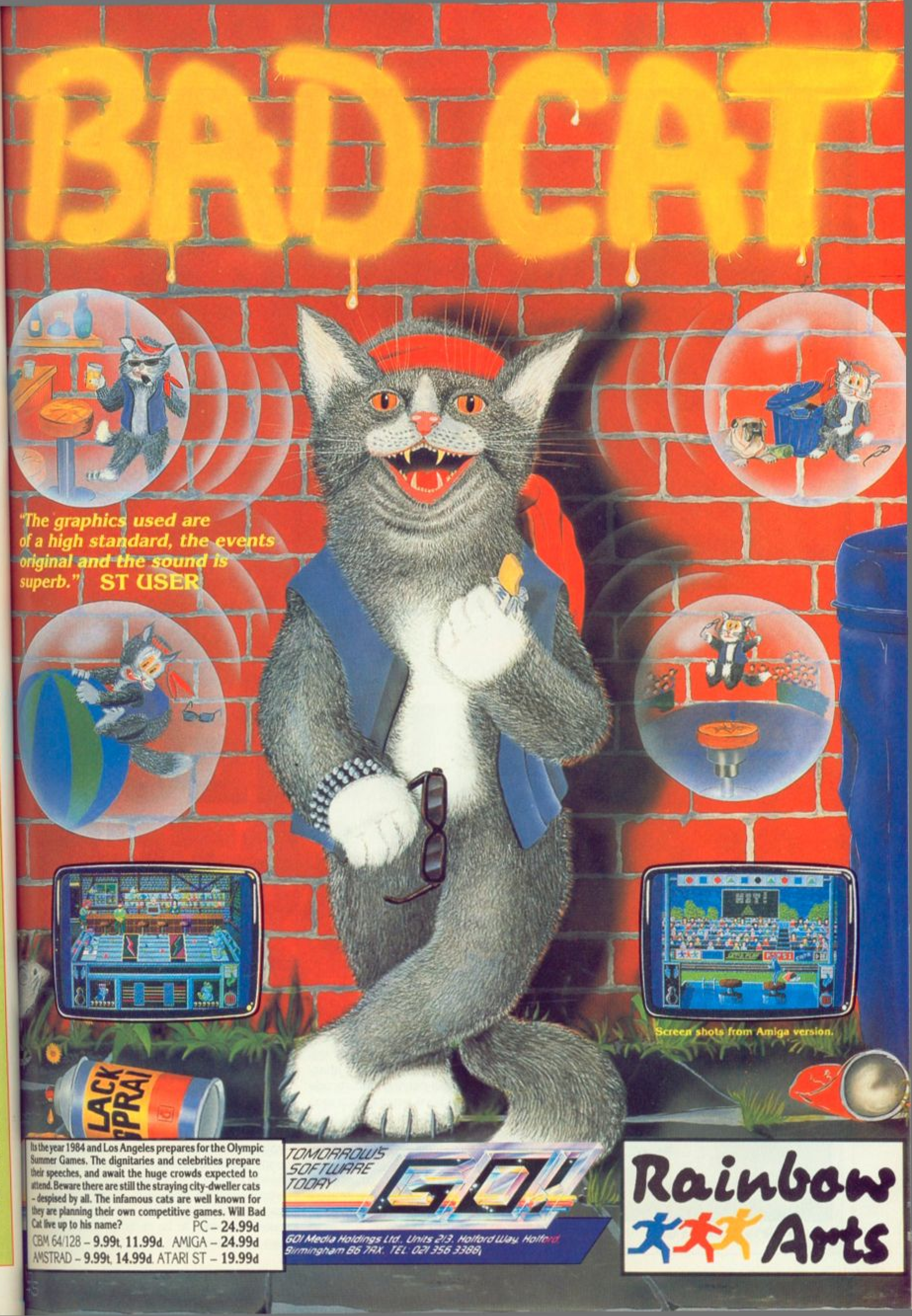
ACE RATING 546



Getting those crates onto the diamonds isn't going to be as easy as it looks. And this is only screen number 10!

RELEASE BOX

C64/128	£12.99dk	OUT NOW
IBM PC	£19.99dk	OUT NOW



"The graphics used are of a high standard, the events original and the sound is superb." **ST USER**

Screen shots from Amiga version.

Its the year 1984 and Los Angeles prepares for the Olympic Summer Games. The dignitaries and celebrities prepare their speeches, and await the huge crowds expected to attend. Beware there are still the straying city-dweller cats - despised by all. The infamous cats are well known for they are planning their own competitive games. Will Bad Cat live up to his name?

PC – **24.99d**
CBM 64/128 – **9.99t**, **11.99d**. AMIGA – **24.99d**
AMSTRAD – **9.99t**, **14.99d**. ATARI ST – **19.99d**

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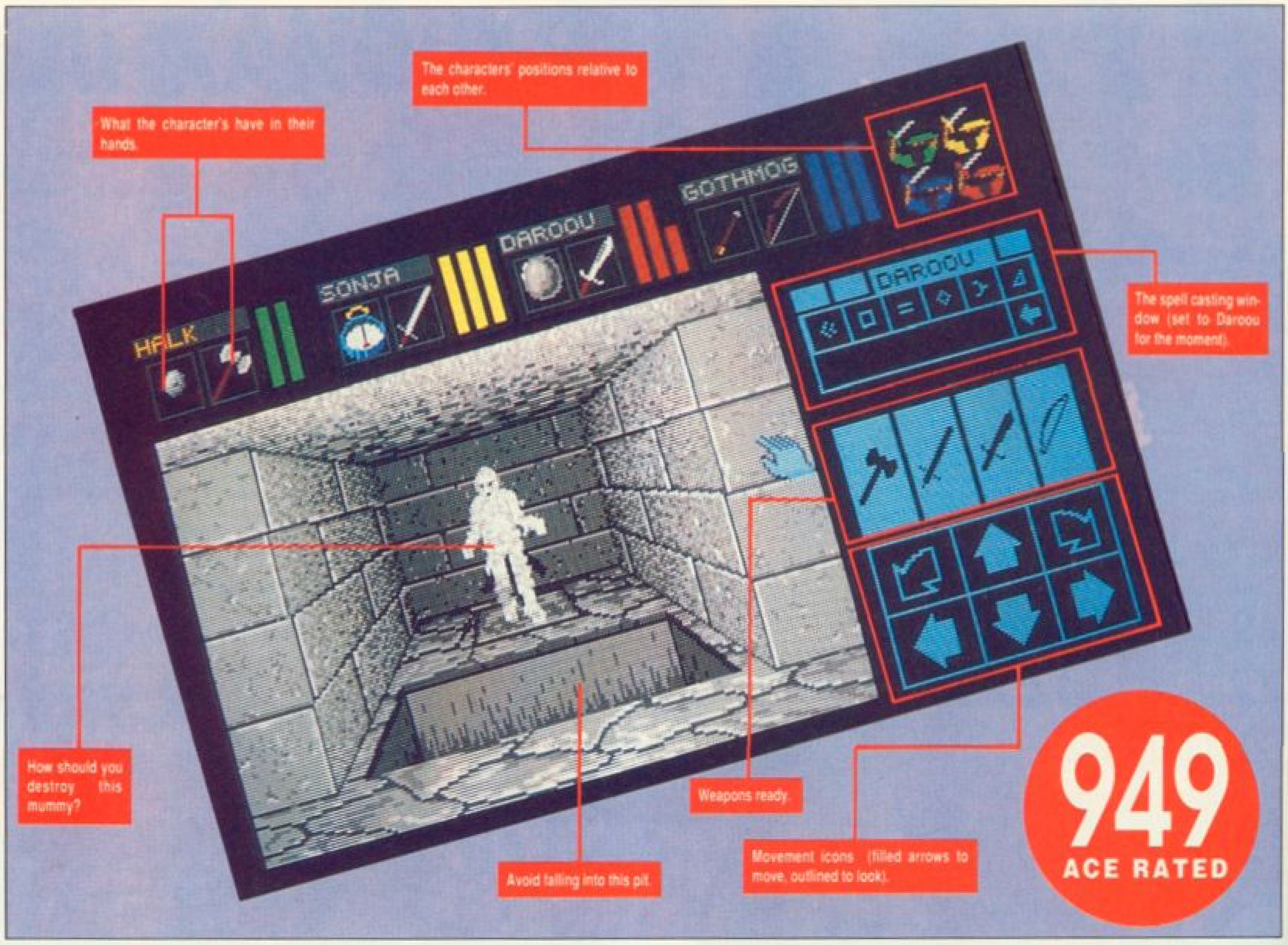
Rainbow Arts


The characters' positions relative to each other.
What the character's have in their hands.
HALK
SONJA
DAROOU
GOTHMOG
DAROOU
The spell casting window (set to Daroou for the moment).
How should you destroy this mummy?
Weapons ready.
Avoid falling into this pit.
Movement icons (filled arrows to move, outlined to look).

949
ACE RATED

DUNGEON MASTER

MIRRORSOFT's fantastic quest

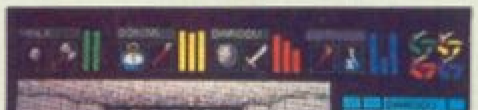
FIENDISH puzzles and a multitude of obnoxious monsters prove to be the main ingredients of this huge, immensely playable and very atmospheric mixture of role-playing and arcade adventure. If you've been waiting for a real-time role-playing game that not only looks good but manages to keep you interested for long periods of time, then your prayers have been answered.

You take the part of Theron, an apprentice wizard who's out to rescue his master's Firestaff from the Dungeons of Lord Chaos. How your master came to lose his staff (and end up having his soul split in two) is the subject matter for the short story that comes with the package.

Twenty four adventurers have already attempted to recover the Firestaff; all failed. As Theron, you now have the chance to resurrect up to four of these adventurers to accompany you. Your choice of character is influenced by their peculiar attributes, and you'll need a fair mix of skills within your party if you wish to survive. Fighters will be needed to deal with the various monsters, wizards will be needed to create and cast spells to deal with really tough monsters and priests will need to be on hand should anyone become injured.

TURNING ON THE WORMS

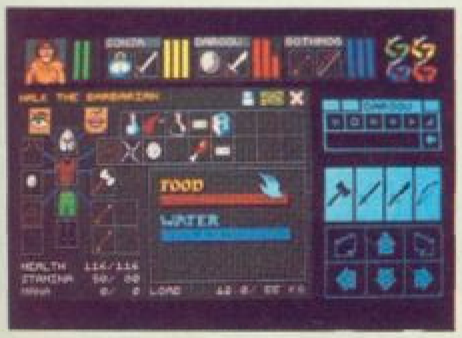
Once you've got a fair way into the game you'll come across some pretty ferocious purple worms that can reduce your battle hardened-team to so many bones in a short space of time. The way to defeat these monsters is to find yourself a metal doorway (one you can operate with a button on a wall) and lure the worms towards it. Stand on the other side of the doorway and keep it closed, ensure you have plenty of anti poison potions ready and put your best fighters at the front. Position yourself as close to the door as possible and raise it. As soon as the worms enter, hit the door button to close it and get your fighters going. You'll notice the doorway banging up and down on the worms (causing them damage) and after a while the worms will retreat. Recover your strength, un-poison anyone who's been bitten and repeat the process. Sooner or later the worms will be defeated.



Hit the button now! Then pile in with your fighters.

VITAL STATISTICS

As with all role-playing games the characters in *Dungeon Master* develop during play, their abilities improving with practice. A character's current ability levels can be examined by selecting the status screen and clicking the pointer on the eye icon. The rest of the status screen shows which particular character you've selected (Halk in this case), what they're carrying and their food and water levels. The top right of the screen shows the positions of the adventurers as they move through the dungeon. Halk and Sonja are at the front at the moment but the player can alter the line-up whenever he feels like it, matching the abilities of the leader with the most immediate challenges.



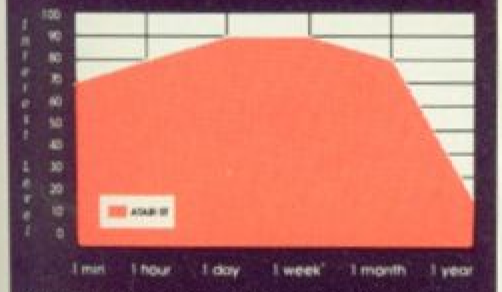
Atari ST Version

The graphics, though largely repetitive, are wonderfully drawn and coloured. Sound is sparse but the effects are great. A thrilling game, with plenty in it to keep you searching, fighting and pondering for a long time.

GRAPHICS	9	IQ FACTOR	7
AUDIO	6	FUN FACTOR	9

ACE RATING 949

PREDICTED INTEREST CURVE

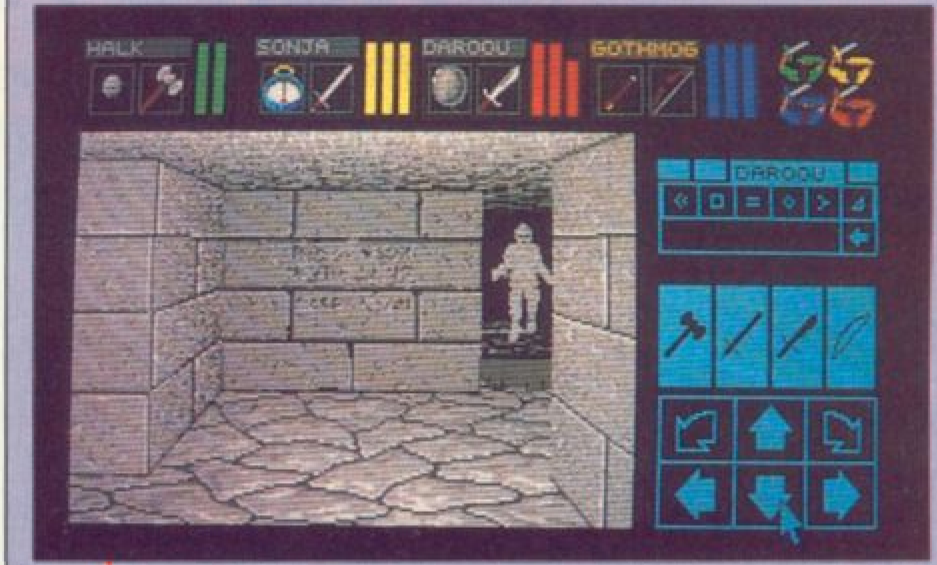


You'll play this 'till you get completely stuck – or you finish it. Either way, you'll play for a long time to come.

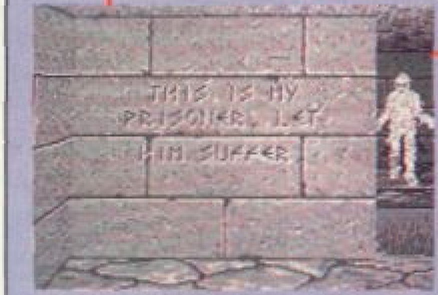
RELEASE BOX

ATARI ST	£24.99dk	OUT NOW
No other versions planned		

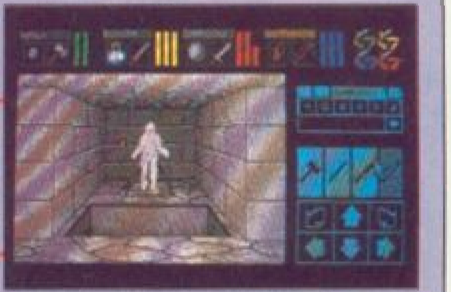
The Worm's Turn...



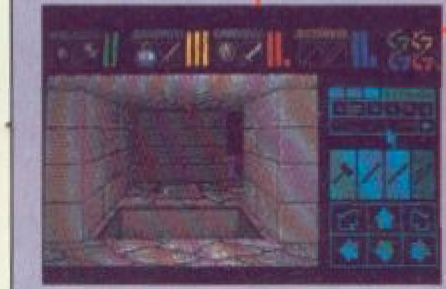
1. Walking through the Dungeon, there's a mummy up ahead, but he seems to be blocked in by a pit. What's that writing on the wall?



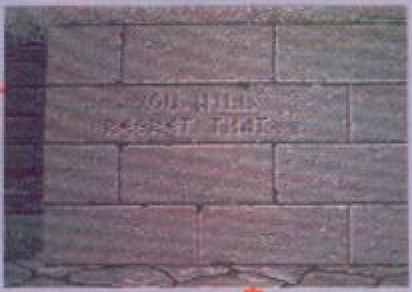
2. Curiouser and curiouser!



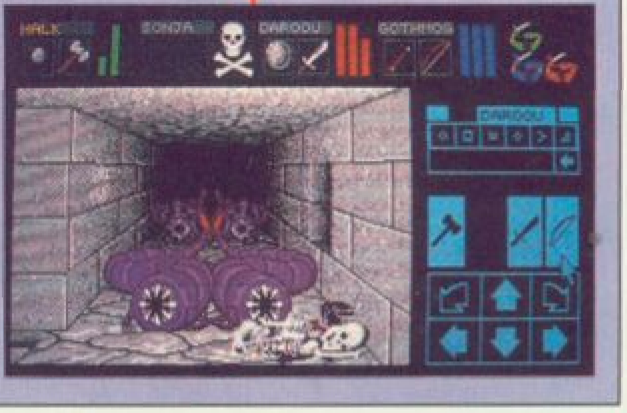
3. Well, he's standing on a panel that might open a secret doorway, or it might close the pit if you can destroy him without leaving anything heavy on the panel. Gothmog's got a bow and arrow, that'll do the trick.



4. A secret passage has been opened! Now how to get to it? And what are those purply thingummybobs?



5. One step to the right, and an ominous warning has suddenly appeared on the wall. Oh dear!



6. That mummy not only opened a doorway, it released some particularly vicious nasties that can make short work of your party. With Sonja gone and Halk on his way to join her, it might just be time to re-load and try another approach.

The game is viewed through a large window taking up most of the screen, with icons across the top of the screen relating to each individual's health, stamina, magic levels and whatever equipment they happen to be carrying in their hands. Food, water and other equipment found throughout the dungeon is carried in an individual's back-pack.

Lord Chaos has not only filled his dungeon with a variety of hideous monsters, he's also thrown in some tricky puzzles that need solving before you can progress. These puzzles are of various kinds; some are simple logic puzzles whilst others take the form of riddles. Still more rely completely on the timing of your moves across a particular area.

No fantasy adventure would be complete without a smattering of magic, and *Dungeon Master* has it's fair share. You won't have to worry about collecting eyes of newts or wings of bats though, because the ability to cast a spell is only dependent upon a character's magic level. For example, Gothmog is a journeyman wizard with a high magic level, which means he can let loose with some pretty powerful spells – fireballs for example, or magic stamina potions which can come in very handy during a tough fight. Halk on the other hand has no spell power so he's never able to learn and cast spells.

Dungeon Master is a wonderful game that will puzzle and entertain you for a long time – with 14 levels to the game, it's doubtful you'll finish it in one sitting. Thank heavens then for that save game option.

● Andy Smith

STRIKE FLEET

ELECTRONIC ARTS pipe you aboard

TASTE has never been the American strong point, but some might find the Falklands War secenarios in this conflict simulation from across the Pond a little more than badly-judged. The Falklands War was only six years ago, after all, and touched the lives of more than just a few of our population.

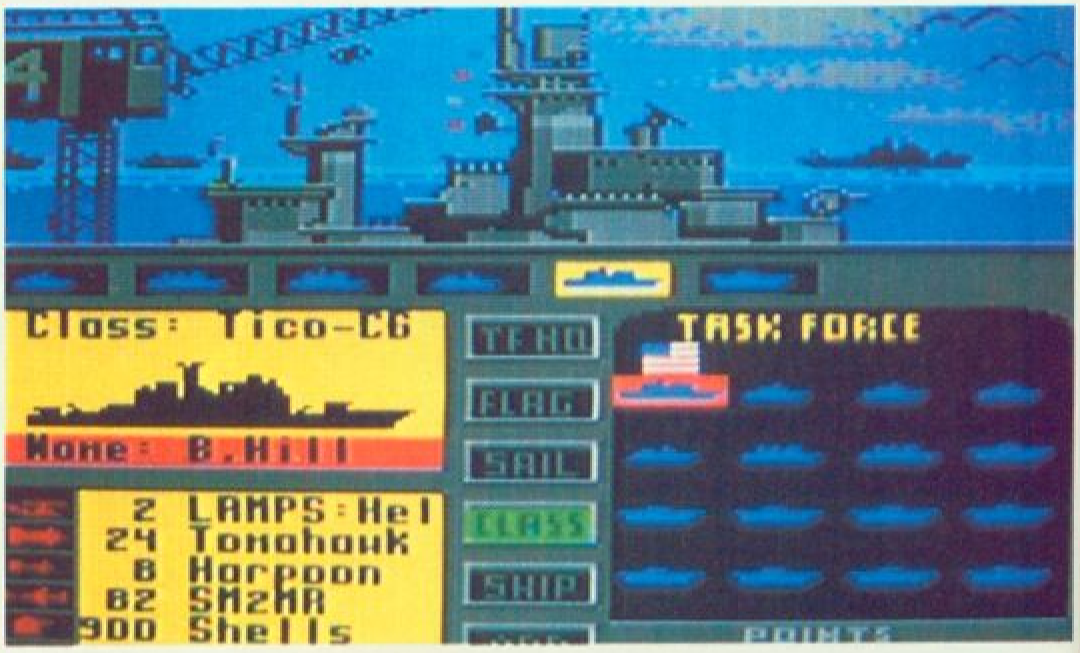
Still, not all of the ten scenarios found in *Strike Fleet* are based in the South Atlantic – some are set in the volatile Persian Gulf and others involve bottling up the Soviet fleet in the Norwegian Sea.

The player takes charge of the whole fleet during any particular scenario; the number of ships and helicopters available to you varies depending on which scenario you happen to be playing. Objectives include sinking a certain number of subs within a time limit (this is one of the scenarios set around the Falkland Islands), protecting innocent tankers for a specified time etc. Success can mean promotion through the ranks to Fleet Admiral whereas failure can result in a court martial.

There's plenty to keep the player occupied in the game though most will bless the game's speed-time-up function when things are quiet. *Strike Fleet* is a well put together and involving game that will keep you busy for quite some time – that's if you can stand the politics.

● Andy Smith

RELEASE BOX		
C64/128	£14.95dk	OUT NOW
	No other versions planned	


Class: Tico-CG
Name: B.Hill
2 LAMPS:Hel
24 Tomahawk
8 Harpoon
82 SM2MR
900 Shells

The shipyard screen. Here's where you decide the number and class of ships in your task force.

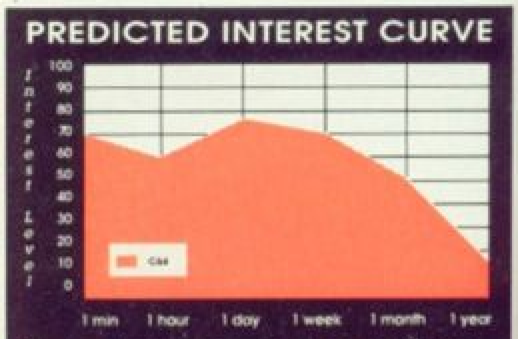
C64 Version

Nice graphics and sound make for an enjoyable game. You'll need to apply a fair amount of tactical and strategic thinking if you wish to gain that exalted rank of Fleet Admiral. But it's not all a mental excercise – there's enough action to keep you busy too.

GRAPHICS	7	**IQ FACTOR**	4
AUDIO	4	**FUN FACTOR**	7

ACE RATING 707

PREDICTED INTEREST CURVE



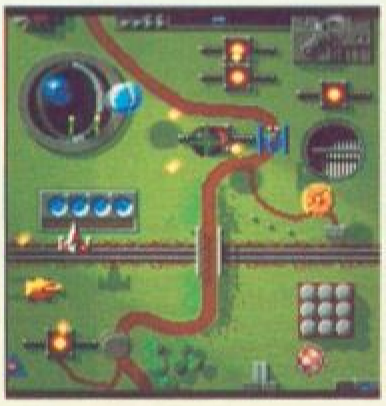
Complex and compelling enough to keep you interested for a while.

BLACK SHADOW

Asteroid action from CRL

CRIKEY! A monster asteroid is threatening to put the Earth into a permanent eclipse. It's up to you (and a friend if you wish) to stop it by flying across the vertically-scrolling landscape and destroying the military bases, industrial units and solar hyper-reactor. *Black Shadow* is very pretty, murderously difficult and extremely playable but it's just another shoot-em-up with no outstanding features.

● Andy Smith



RELEASE BOX		
AMIGA	£19.95dk	OUT NOW
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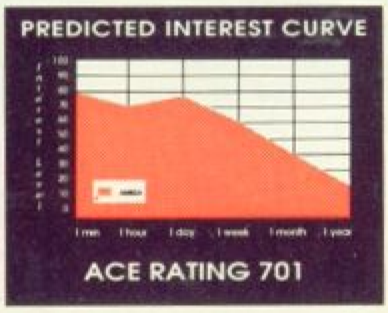
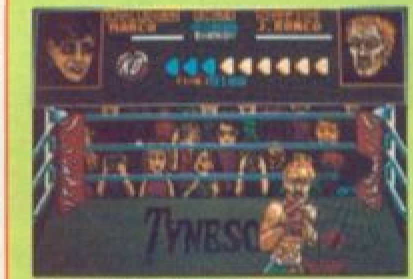


ACE RATING 701

SECONDS OUT

Get punch-drunk with TYNESOFT



THE Marquis of Queensbury would turn in his grave if he knew Mike 'Hammerhead' Hagler was letting loose with headbutts in the ring. It doesn't seem to worry Tynesoft, however, and why should it when your man in the ring is transparent? You've got five opponents to fight - each slightly tougher than the last, on the road to the championship title. Good fun but don't expect it to go the distance.

● Andy Smith

RELEASE BOX		
ATARI ST	£19.95dk	OUT NOW
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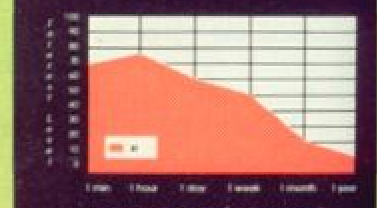
PREDICTED INTEREST CURVE



ACE RATING 582

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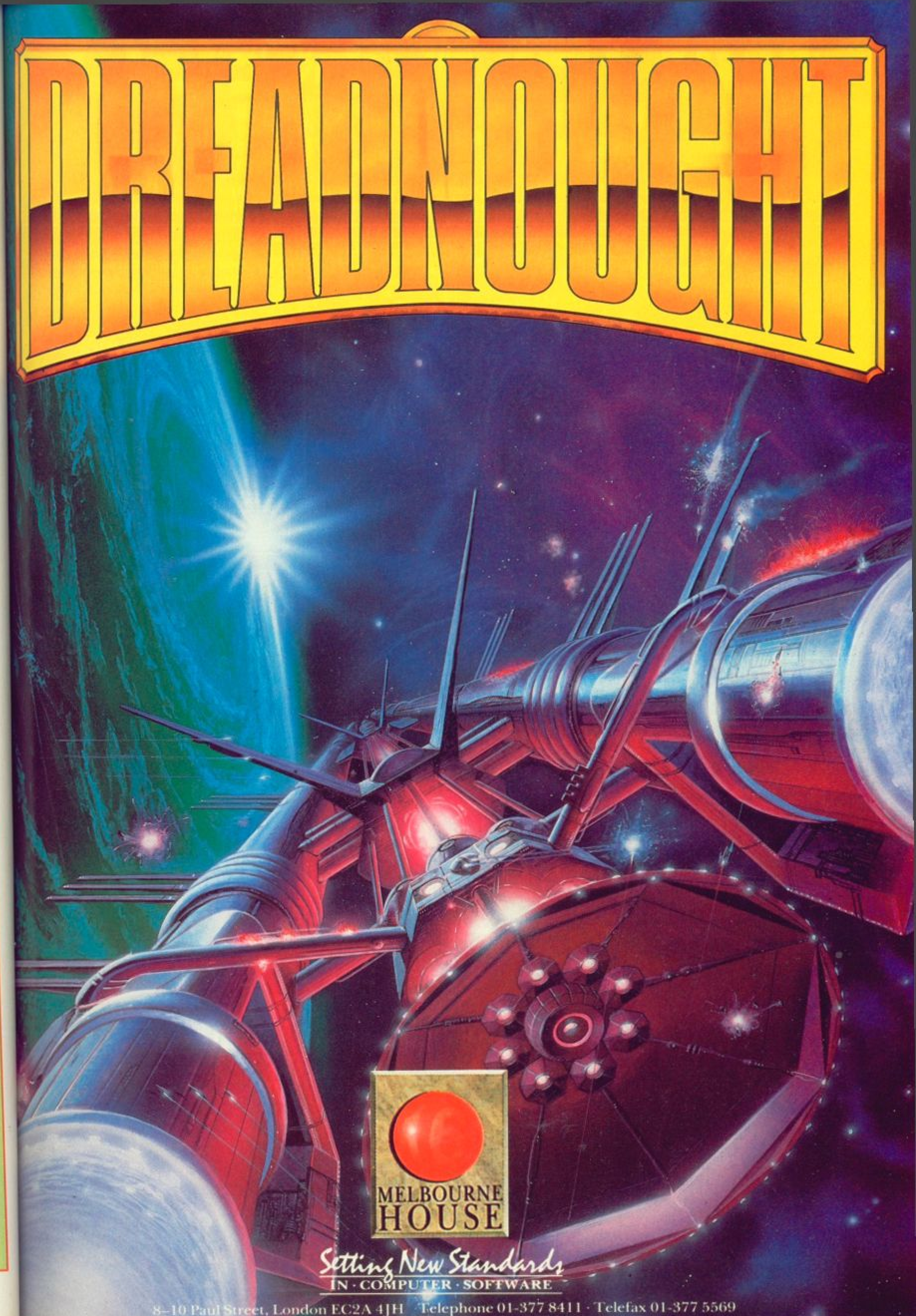
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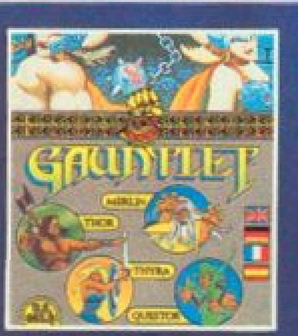
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THOR
THYRA
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WIZARD
SCORE HEALTH
PRESS FIRE

A C&VG hit. They said *"Great graphics, good sound, perfect playability – what more could you ask for?"* The best selling game of 1986 – a UK No. 1 and the Gallup charts for 48 weeks.

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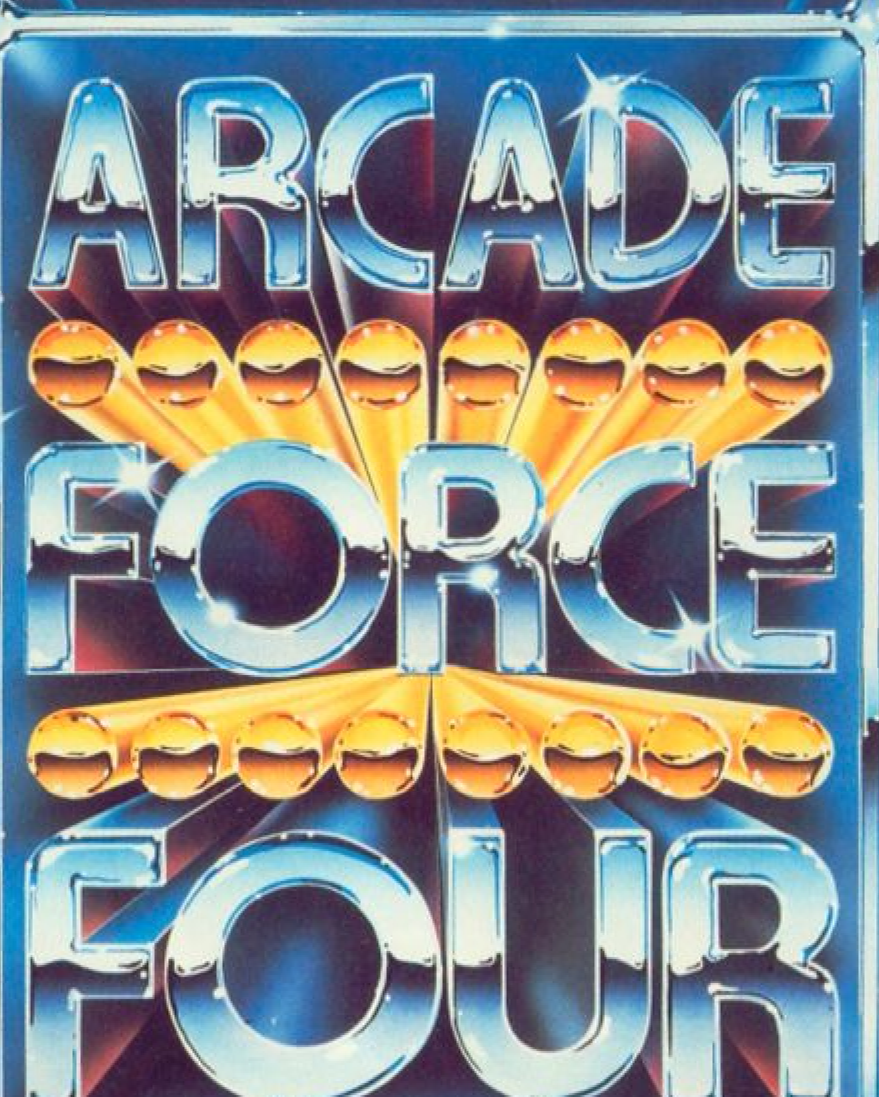
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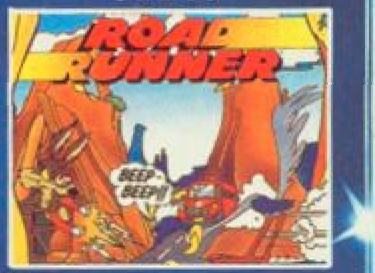
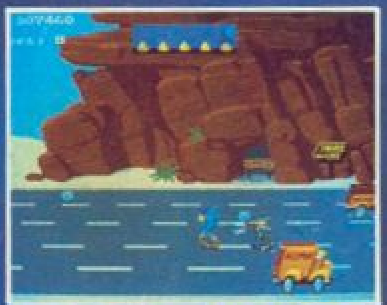

ROAD RUNNER
BEEP-BEEP!



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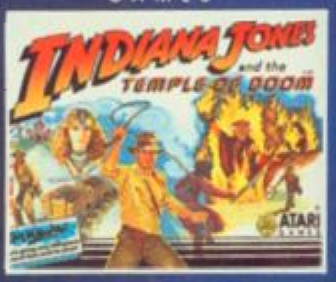
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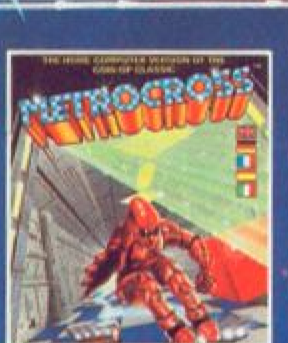
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PREDATOR

ACTIVISION go wild in the jungle!

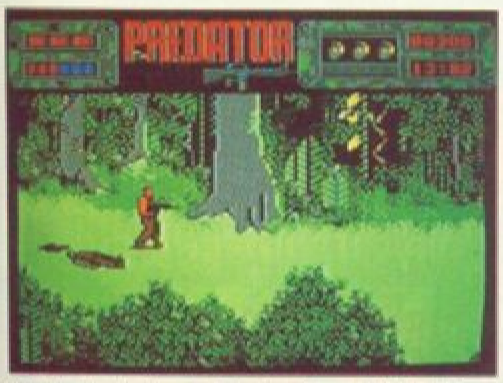
ARNIE Schwarzenegger fans will jump for joy at the very idea of this one – a strip of sideways-scrolling jungle, a whole bunch of rebels and a wide range of weapons to kill 'em with – but the game does leave something to be desired.

The idea's simple: run along a strip of bush shooting bad guys and wild animals, dodging hostile fire and collecting weapons. The only complication – the alien hunter who's been killing your men off – intrudes as a gun-sight tracking across the screen after you. You'll lose a life if this zeroes in successfully, but outrunning it is rarely a problem.

The weapons available to you might look different, but they tend to be remarkably similar in performance. Ammo for each is limited, so use it sparingly. The bind is that, with the weight of opposition you face from rebels and (what look like) fruit bats, you can't shoot everything that attacks you. You could try punching, but that won't get you much further than if you just keep running.

So you are bound to take hits. Six hits cost you a life and losing three lives costs you the game, so it's just a question of how far you can get before the thing grinds you down. This would get dull enough even without the game's poorly implemented multi-load, but on tape versions the overall game experience is a lot like watching paint dry.

● Andy Wilton



C64 – You're out of ammo. Time to grab your dead buddy's gun then, and get on with the action.

RELEASE BOX

C64/128	£9.99cs, £14.99dk	OUT NOW
AMS	£9.99cs, £14.99dk	OUT NOW
SPEC	£9.99cs	IMMINENT
ATARI ST	£14.99dk	IMMINENT

Amstrad Version

Ridiculous graphic glitches and 5mph bullets spoil any visual impression this sluggish scroller might have made.

GRAPHICS	4	IQ FACTOR	1
AUDIO	3	FUN FACTOR	3

ACE RATING 410

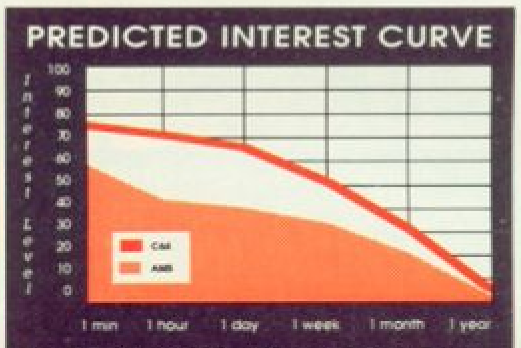
C64 Version

A nice parallax scroll makes this quite palatable stuff, but not exactly interesting.

GRAPHICS	7	IQ FACTOR	1
AUDIO	3	FUN FACTOR	6

ACE RATING 606

PREDICTED INTEREST CURVE



Even the faster, better-looking C64 version gets dull after a while.

SIDE ARMS

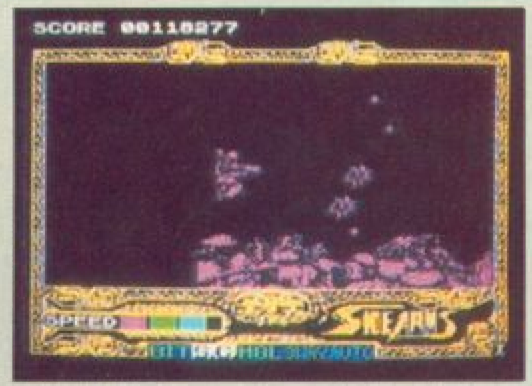
GO! shoot some aliens – again

ALIEN tyrants seem to play an important part in game scenarios and the latest to threaten the Earth takes the name of Bozon. Thankfully there's usually a hero for the player to control in an attempt to thwart the tyrant's plans.

Step in Lieutenant Henry and Sergeant Sanders (that's you folks) for this one (C64 has two-player option) player blast that will bring you face to face with The Mobile Armour Sentipet, Bozon's secret weapon. As seems to be the norm of late with this style of game, there are numerous extra weapons to pick up. Destroy a wave of aliens, pick up the symbol that appears on-screen and you'll gain a benefit. Shooting the symbol sends it cycling through a range of benefits to choose from – extra speed, 3-way shots or a Mega Bazooka Launcher etc. You can then start to think about going for the extra points gained from shooting various non-aggressive animals and fruit that appear occasionally.

While the game can be fun for a short while, there's nothing in it to make you come back for more. Disappointingly simple stuff that doesn't have any new features to keep the player interested for very long.

● Andy Smith



SPECTRUM – blasting away at the start of level two. You have to play solo on the Speccy.

RELEASE BOX

C64/128	£9.99cs, £11.99dk	OUT NOW
SPEC	£8.99cs	OUT NOW
AMS	£9.99cs, £14.99dk	IMMINENT

ST version planned

Spectrum Version

Colourful graphics can't gloss over the poor gameplay and collision detection problems. End-of-level guardians make their appearance here but even they won't help to keep you interested for long.

GRAPHICS	6	IQ FACTOR	1
AUDIO	3	FUN FACTOR	4

ACE RATING 493

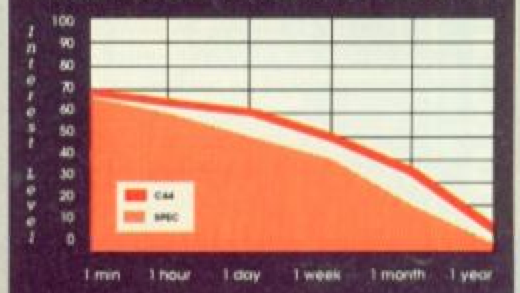
C64 Version

The best of the bunch simply because it has a simultaneous two-player option. This makes the game more enjoyable, and therefore likely to keep you interested for longer. You pay for this extra option in the C64 version though with multi-load.

GRAPHICS	7	IQ FACTOR	1
AUDIO	4	FUN FACTOR	5

ACE RATING 594

PREDICTED INTEREST CURVE



The C64's simultaneous two-player option increases the game's longevity – but only slightly.

DRILLER

IBM PC ● Incentive £19.95

It's gas build-up time on Mitral again folks, and we're not talking about indigestion either. The noxious vapours produced by dodgy mining techniques have risen in pressure to the point where they could blow the whole place apart, so you'd better start placing your drilling rigs pretty fast, hadn't you?

On the 8-bit scene this one made quite a splash, and no wonder – the solid 3D good looks and 'real world' feel to the game made it both original and impressive. Now on the PC it's got a special something extra: speed. It's fast! On an 8Mhz CGA PC like the Amstrad PC1512 it moves three times as fast as the 8-bit versions, and that's a phenomenal difference.

The game itself hasn't changed – there's still the same mix of tricky puzzling and frantic blasting – but with so much extra speed the latter is nicely hotted up. The overall feel is of an action game with adventure components rather than vice versa, and that's probably going to make the game a whole lot more popular – not that it was doing any too badly as it was.

A start-of-game menu allows you to use Amstrad or IBM joysticks instead of the main keyboard controls, while the choice of CGA or EGA versions will let colour 1640 owners play the best-looking *Driller* yet. (Mono 1640 owners please note, there's no Hercules option so you're out in the cold yet again!) Ambitious stuff that succeeds admirably, this would be a worthy addition to any serious gamesplayer's collection.

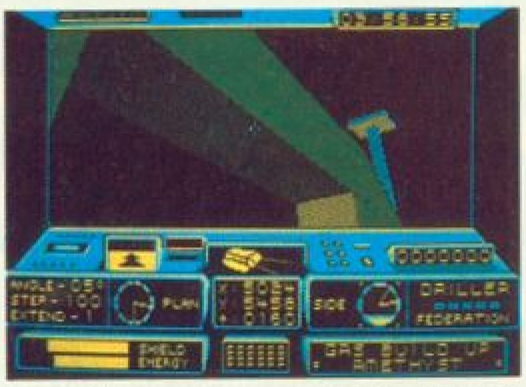
● Andy Wilton

IBM PC Version

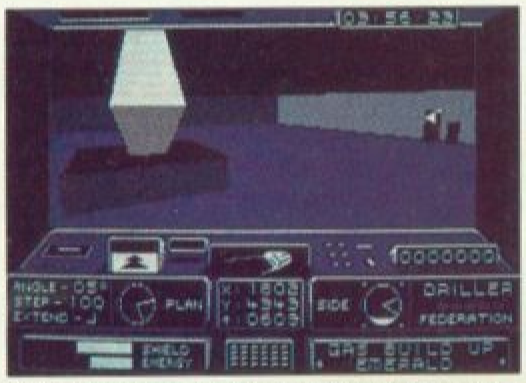
The best *Driller* yet and a fine game by anyone's standards, this game looks great, moves well and is a joy to explore.

GRAPHICS	9	IQ FACTOR	8
AUDIO	3	FUN FACTOR	8

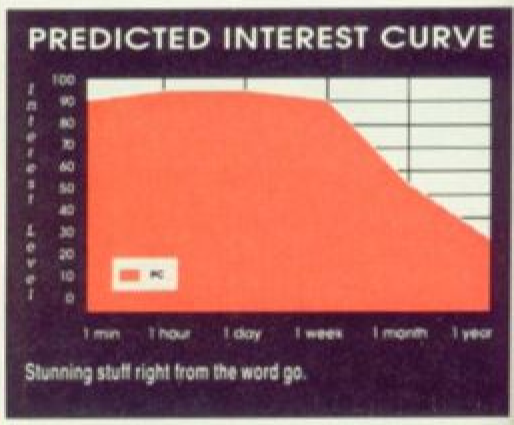
ACE RATING 962



PC1640 – Driving around in your excavation probe, you pause to look up at the arch above you.



PC1640 – Flying the spotter plane now, you close in for a look at a giant energy crystal – but watch out for that gun-turret by the door.



Stunning stuff right from the word go.

MERCENARY

AMIGA ● Novagen £24.95

When *Mercenary* first appeared on 8-bit formats it immediately achieved cult status and created quite a stir amongst gameplayers. You either loved the game and played it for months on end, or you hated it and couldn't play it for more than 10 minutes without getting bored stupid.

Whichever faction you happen to belong to doesn't alter the fact that the game has real depth. Your task is simply to escape the war-torn planet of Targ on which you've crash landed. But achieving that will take you a long time. Your own spaceship's a write off, so the whole game revolves around trying to acquire a new craft in which you can achieve escape velocity and head off home. The planet's two main inhabitants – Palyars and Mechanoids – are at war with each other, and either side is willing to pay for your mercenary services. Should you choose to remain neutral, you could even try playing the races off against each other...

The game area is huge, and most of the action takes place overground in Targ's Central City, which has a equally large underground complex for you to explore. If you're looking for a game with a huge quest to complete then look no further.

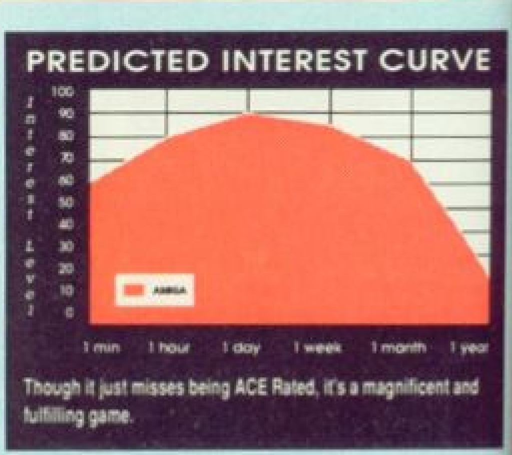
● Andy Smit

Amiga Version

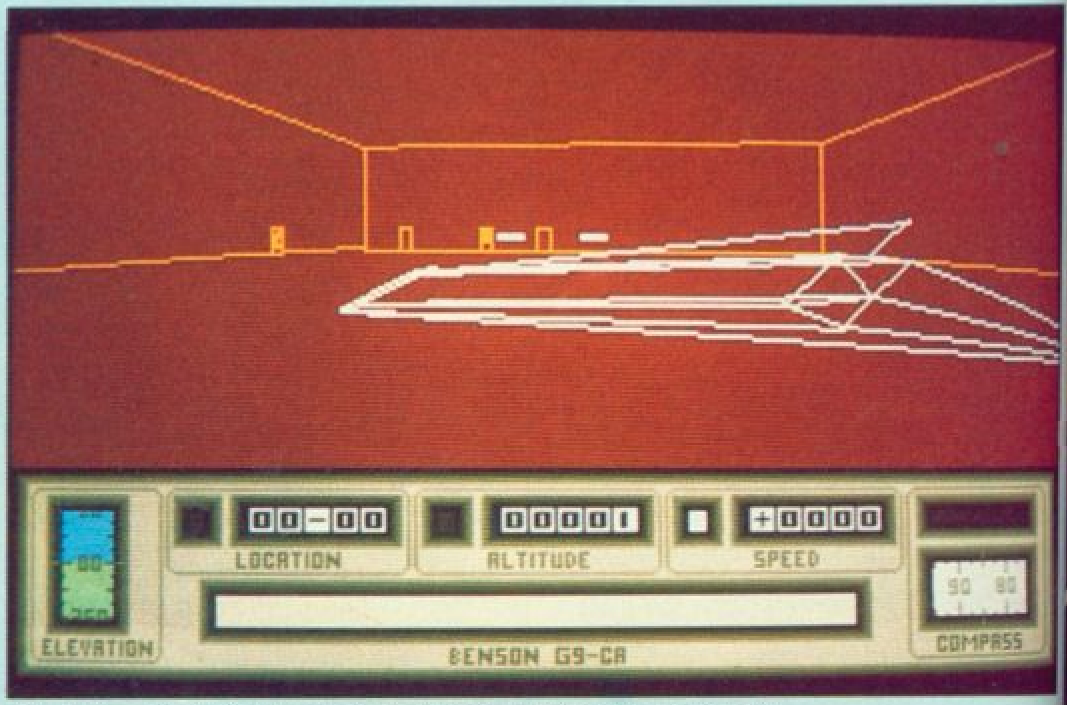
Despite the power of the Amiga, the game is still in it's vector format. This is a little controversial – some will doubtless have wished the buildings and objects to be filled in while purists would argue that this would remove most of the game's aesthetics. With the Second City included, this is a must for explorers and adventurers.

GRAPHICS	8	IQ FACTOR	6
AUDIO	6	FUN FACTOR	8

ACE RATING 894



Though it just misses being ACE Rated, it's a magnificent and fulfilling game.



You're inside one of Central City's hangars and you've found a land craft. Should you risk pinching it?

WIZARD WARZ™

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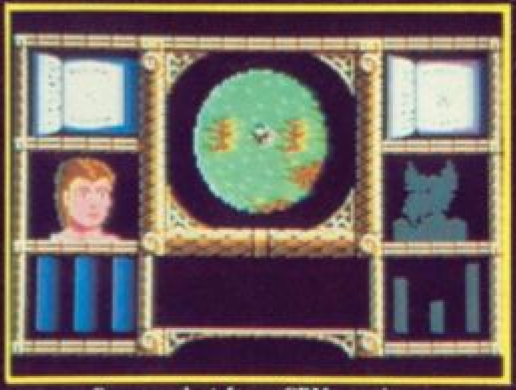
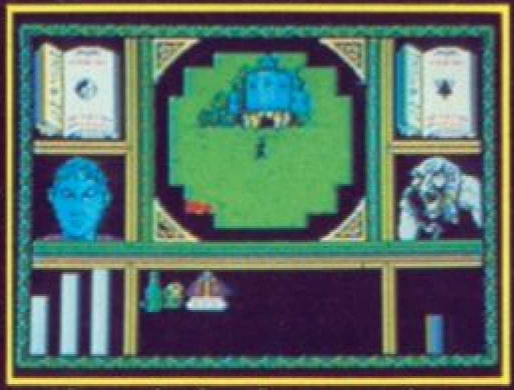
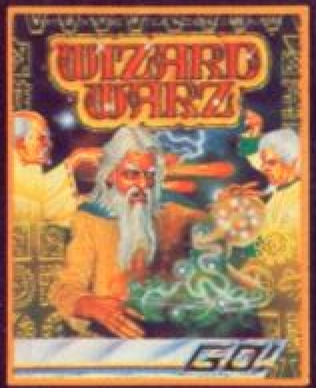
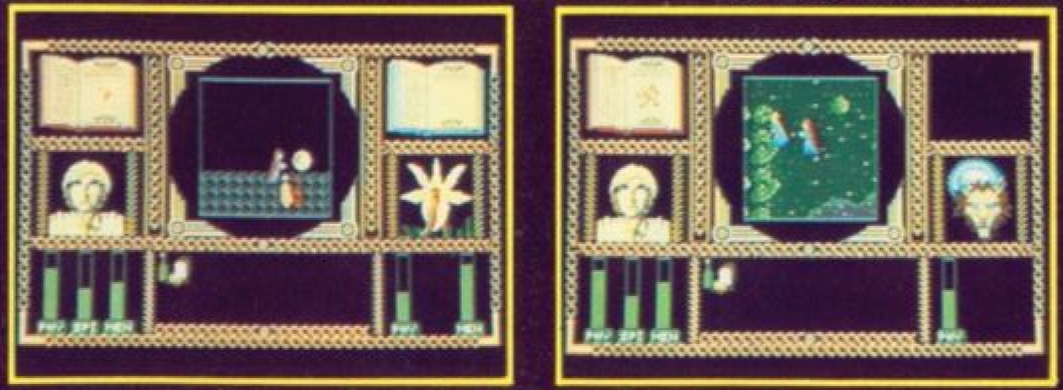


Screen shot from CBM version.



Screen shot from Spectrum version.





Screen shots from Atari ST version.

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The year is 2032 AD and the world is balanced on a knife edge between survival and destruction. The last thirty years have seen an enormous expansion of the world's nuclear arsenal. There are now 16 nuclear superpower nations, each with the capacity to trigger the final destruction of mankind – Armageddon!

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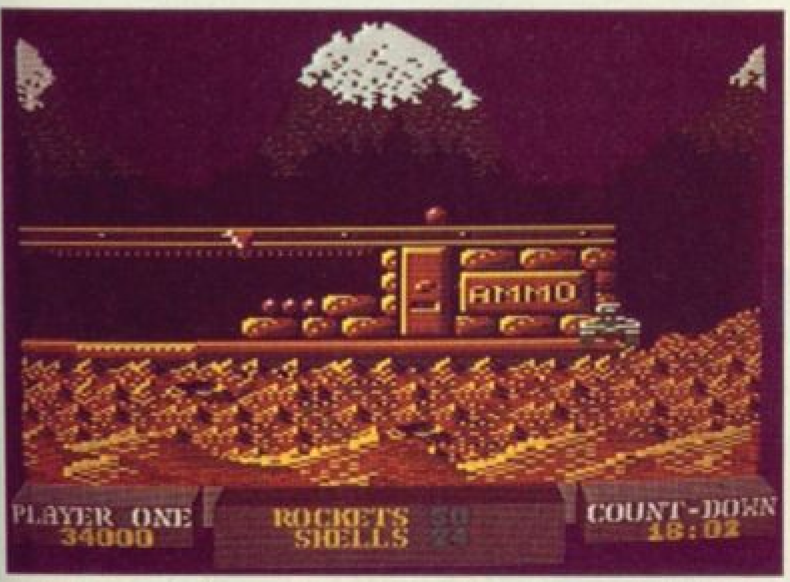
BATTLE VALLEY

RACK-IT go blasting



SCROLLING shoot-em-ups are not a thing of the past; down in *Battle Valley* the action is thrilling as ever, with tank and 'copter in the thick of the battle.

The game pits you against a variety of land and air-based weapons installations, all blasting away at you. Choosing either tank or chopper you zoom off sideways to settle their hash.

Battle Valley's scrolling is excellently done, the action is fast and the sound effects...effective. All in all, it's a very good budget shoot-em-up.

● Pete Connor

RELEASE BOX

C64/128	£2.99cs	OUT NOW
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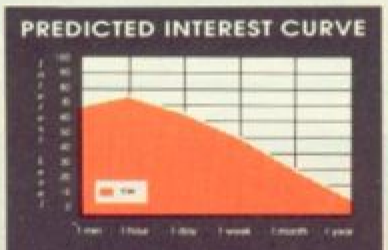


ACE RATING 641

ALIEN SYNDROME

Damp squib from SEGA

PACMAN was a very compulsive game. It still is. So are many other classic game ideas – *Robotron, Defender, Galaxians,* say. But we don't expect to see these sorts of games being released in 1988 on a new console system. We certainly don't expect to pay £24.95 for them.

And that's the problem with *Alien Syndrome*. The overhead view, the milling *Gauntlet*-style opposition, the blasting laser, the buddies to be rescued, the different levels, the end-of-level guardians...what's new?

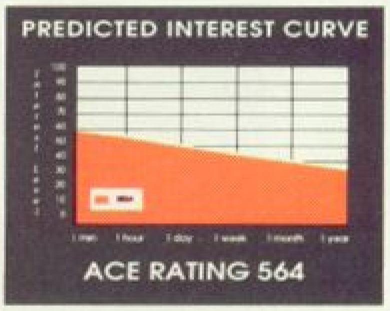
Answer: nothing. Despite unimaginative graphics and poor sound, it's still quite playable, but do you really want to fork out for this sort of thing all over again? Probably not...

● Steve Cooke

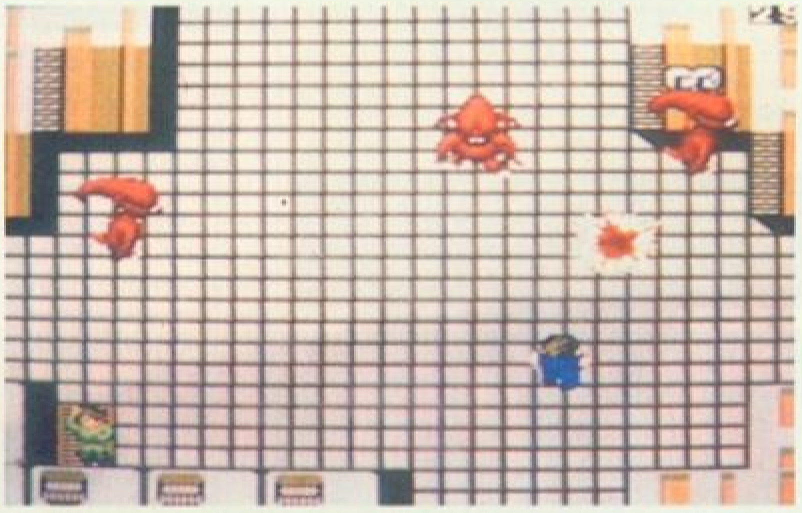
RELEASE BOX

SEGA	£24.95cr	OUT NOW

PREDICTED INTEREST CURVE



ACE RATING 564



TIME FIGHTER

CRL don't know what time it is

FIGHTING your way through different time zones using the weapons of each epoch, doesn't sound like a bad idea at all. And if you've got nicely animated characters, all the better.

Sadly, *Timefighter* is a bit of a botch. While the tiny figure you control is well animated, everything else about the game leaves an awful lot to be desired. The 'plot' is perfunctory, the backgrounds are dull, the sound effects execrable. To cap it all, the gameplay is dreadfully dull.

● Pete Connor

RELEASE BOX

C64/128	£9.95cs, £14.95dk	OUT NOW
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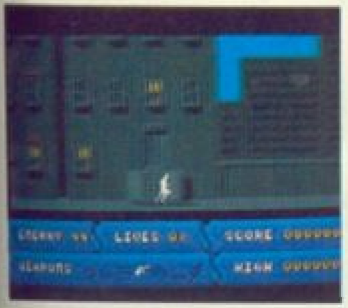
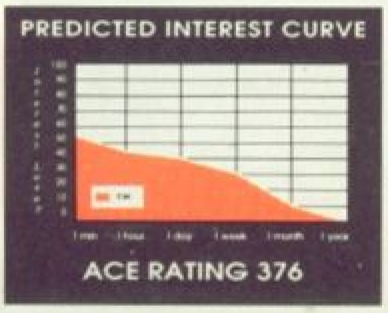


PREDICTED INTEREST CURVE



ACE RATING 376

DEMON STALKERS

EA go clone arranging

CLONES just keep coming. This one's pretty *Gauntlet*-ish, offering 100 screens of maze action as you attempt to clear the Magic Vaults of the evil of Calvrak.

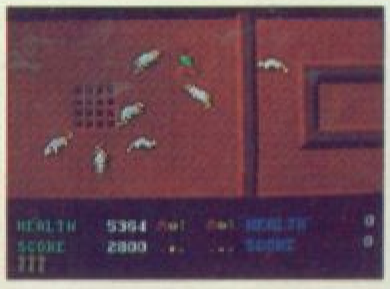
Each of the many levels has, of course, its own swarm of monsters, stack of treasure chests and bunch of keys. It's a question of getting the requisite keys to get through to the next level, while fighting the monsters and eating and drinking enough to keep your strength up.

An average example of the genre in all ways. Cassette owners bear in mind loading times.

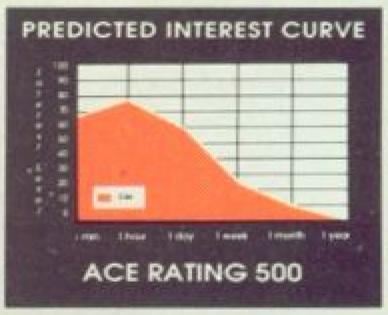
● Pete Connor

RELEASE BOX

C64/128	£9.95cs, £14.95dk	OUT NOW
No other versions planned		



PREDICTED INTEREST CURVE



ACE RATING 500

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INTRIGUE

MIRRORSOFT join the fight against crime

CHEEZ Saint, is dis yet anuvver game about peepers?'

'It is indeed, Hoppy, another game featuring private eyes and...' The Saint's mouth snapped shut and his keen blue eyes suddenly narrowed in intense concentration...

'Aha,' he murmured as Hoppy grabbed a bottle of Jack Daniels. 'The display scrolls horizontally, revealing the streets of Washington DC in glorious monochrome.'

'Glerrk??', choked Hoppy in mid-gargle, 'Look boss – words!'

'They are indeed words, fellow primate, or rather they are commands – though pitifully few of them. It seems we can ENTER (building), TALK TO, WALK, and SEARCH. You can also PHONE and HAIL CABs. The commands appear above the element of the display they refer to, so I can ENTER that building, for example. Inside, we might well encounter the ungodly, whereupon we select a speech option with the joystick and engage their image in limited conversation.'

'Wow! Getta load of dat fizzog...' crooned Hoppy, thrown into a delighted trance by the animated lips of the waitress on-screen.

C64 Version

Yet another attempt to mix graphic action with textual interaction. You get a jaunty tune while you play, but the digitised graphics are poor and the exterior locations crudely depicted in black and white.

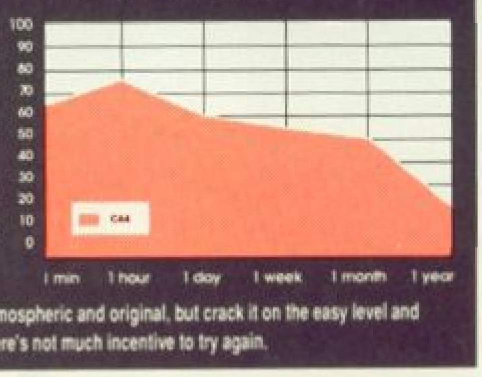
GRAPHICS	5	IQ FACTOR	7
AUDIO	7	FUN FACTOR	6

ACE RATING 671

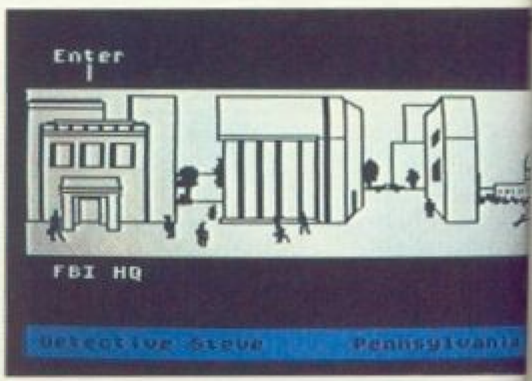
RELEASE BOX

C64/128	£12.99dk	OUT NOW
No other versions planned		

PREDICTED INTEREST CURVE



Atmospheric and original, but crack it on the easy level and there's not much incentive to try again.



Clicking the joystick button will load in a new screen, showing the interior of FBI Headquarters. As you can see, the graphics are largely lacking in detail and the only interest in the game comes from TALKing to other characters – but they soon become repetitive.

'That, Hoppy, is a digitised fizzog...'

'But I don't see no fingers, boss.'

'Probably because it's pretty poor quality', murmured the Saint under his breath...

'Wossitallabout?' enquired Hoppy.

'You must find three objects and the location of a hideout. In doing so you will locate your kidnapped brother and frustrate the ungodly in their attempt to release a cloud of deadly gas above this fair city...'

'Sounds a piece of cake to me, boss...'

'Yes, unfortunately it is,' replied the Saint coolly. 'And there are pitifully few locations to visit. But there are three levels of play, some amusing conversation options, and the locations of the objects change with each game.'

'Looks like a game for mugs,' grunted Hoppy, gazing sadly at his empty bottle.

'You should know', chortled the Saint.

● Steve Cooke (with apologies to Leslie Charteris...)

GEE BEE AIR RALLY

ACTIVISION fly sky high

WANT to fly through the air with the greatest of ease? *Gee Bee Air Rally* puts you at the controls of one of those barnstorming planes of the American 1930s and lets you fly to your heart's content.

The plane you control is the Gee Bee of the game's title – specially designed to take part in races and aerobatics. You compete in three different kinds of events: racing, balloon popping, and slalom.

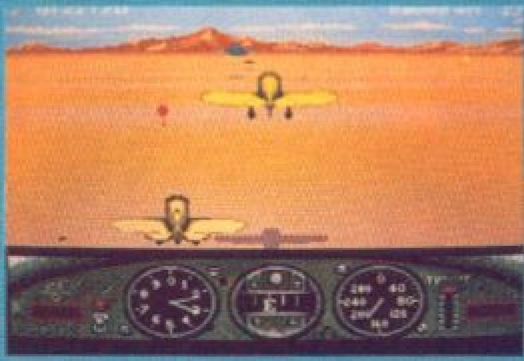
Amiga Version

Excellent graphics are the main attraction here. Each plane is clearly visible, and it's very satisfying to overtake below or above. Sound effects do their stuff, and there's some pleasantly jazzy intro music.

GRAPHICS	8	IQ FACTOR	2
AUDIO	7	FUN FACTOR	7

ACE RATING 679

Racing takes you round a variety of courses, where the bends get tighter and tighter. Ballon popping means hugging the ground and dipping and swerving to pop the spheres. Slalom is slalom – swerving inside and outside the ground-based markers. All of these events take place with com-



Dodge the other planes, dive down and pop those balloons...

puter drone planes confusing the issue.

And that's the real attraction of Gee Bee; the 3D aerial graphics. The planes zoom around very realistically and it's great fun not just overtaking, but flying under and above other planes. Other nice touche include baling out when you have a pran and landing in a haystack with Miss Ame ca 1937...

While Gee Bee's graphics are great an the fun is instant it doesn't, unfortunate have enough substance or variety to make a great game. While there is a variety courses, there are only three basic events racing, slalom and balloon-popping – an these can lose their shine pretty quick Essentially, the game is an aerial version Crazy Cars, and there isn't a lot of mileag left in that idea.

● Pete Conn

RELEASE BOX

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C64/128	£9.99cs, £14.99dk	IMMINENT
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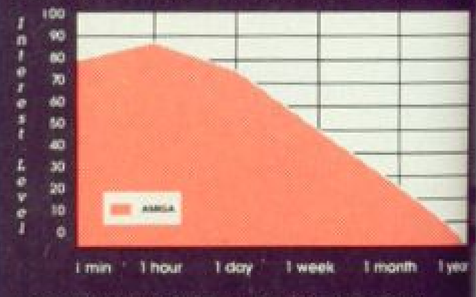

Loops the loop for a short time, but soon starts stalling.

PBM AVALON

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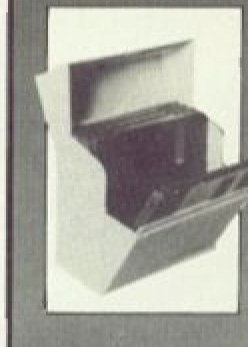

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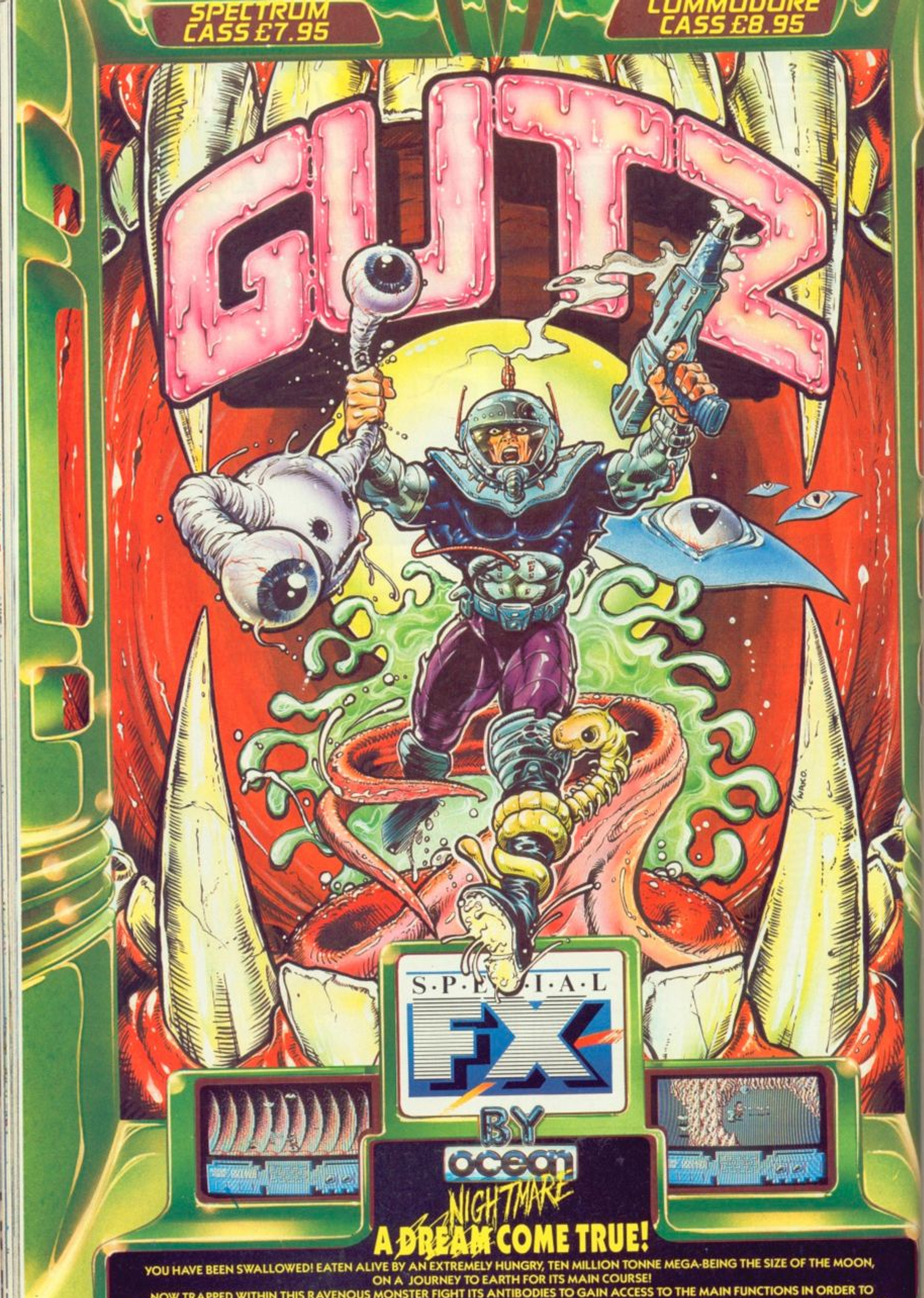
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FRIGHTMARE

CASCADE get traumatised

WHAT can you expect from a program endorsed by Grot Bags the Witch, you might ask yourself – a boring old platform game full of timing problems? Well that's what you get here alright, plus a few other niggles as well. Collectable weapons, extra jumps and the like are all very well, but half of them are practically useless while the other half are so vital you might as well give up if you waste one of them. The supposedly nightmarish graphics are really rather dull and the sprites seriously lacking in colour, leaving the program as a whole somewhat below the standard you'd expect of a two-quid game.

RELEASE BOX		
C64/128	£9.95cs, £14.95dk	OUT NOW
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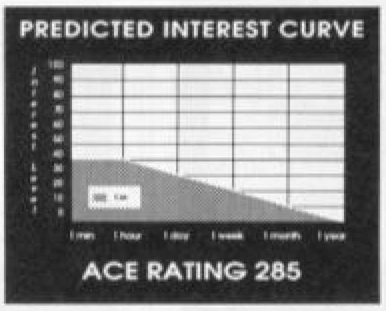
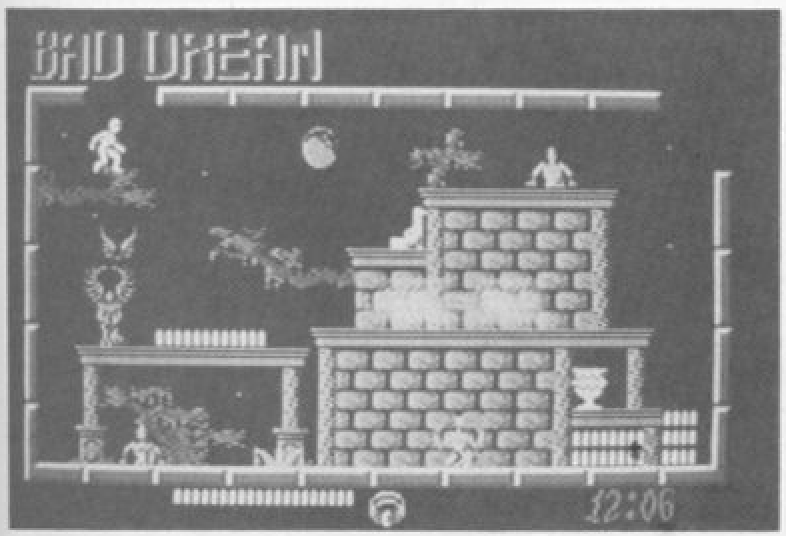


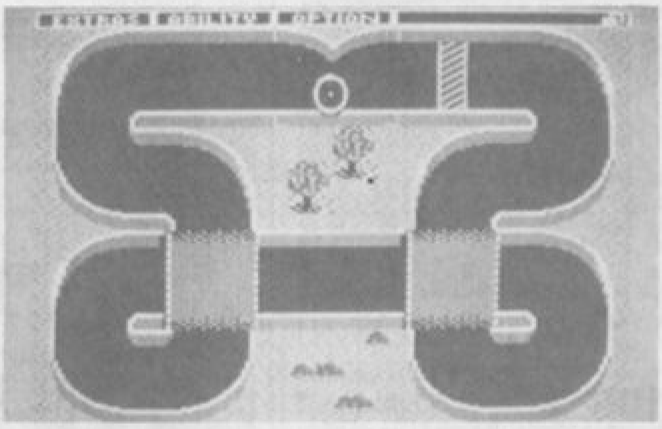
ACE RATING 285

● Andy Wilton



CHAMPIONSHIP SPRINT

ELECTRIC DREAMS alter course



CONSTRUCTION sets are great things to have around on most games, so a re-designable *Super Sprint* must have looked like a good move for ED. As it turns out, this one's not quite the hot property you might have expected. The track designer is nicely implemented but the range of track shapes available isn't too large – you can't even do the first standard *Super Sprint* track properly – and in any case different tracks can only hold your attention for so long. What gripped about the original was the great control and driving action, but sadly this one just doesn't have that in the same way.

● Andy Wilton

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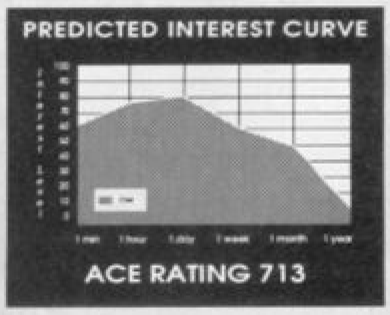

ACE RATING 713

BATTLESHIPS

ELITE get all hands on deck

IT MIGHT be a heck of a lot cheaper to buy a pencil and some paper than it is to buy an Amiga and Elite's version of *Battleships*, but then you'd have to find a friend to play it with you. The micro version gives you a computer-controlled opponent, so you won't have to worry on that score. *Computer Battleships* is a simple game that you'll probably play for years to come – but never get too excited. -

● Andy Smith

RELEASE BOX		
AMIGA	£19.99dk	OUT NOW
SPEC	Only on compilation (*Elite Collection*)	
C64/128	Only on compilation (*Elite Collection*)	
AMS	Only on compilation (*Elite Collection*)	

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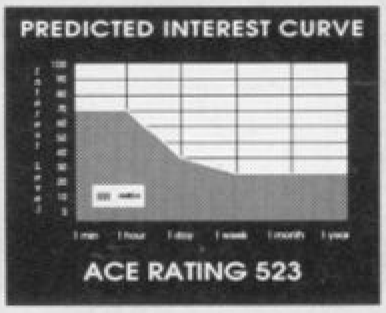
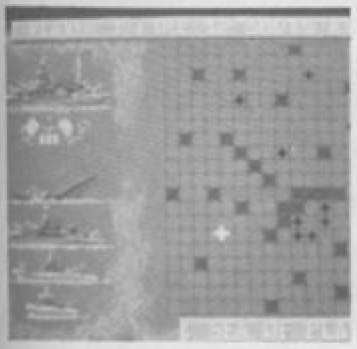


ACE RATING 523



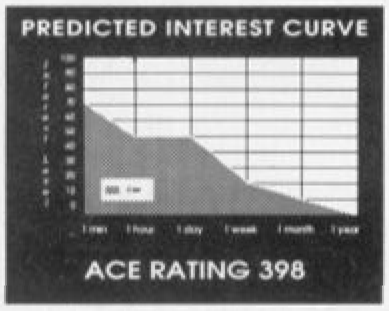
BLOOD VALLEY

GREMLIN'S manhunt

THIS one or two-player game is based on the *Duel Master* series of fighting fantasy books. The game is centred around a central plot of a man hunt, and if you're playing solo you play the quarry. *Blood valley* is an ambitious game that just doesn't deliver, with an interesting game concept ruined by poor gameplay.

● Andy Smith

PREDICTED INTEREST CURVE



ACE RATING 398

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Don't tell me – you've been green with envy over all those terrific games coming out for every machine under the sun except yours. Fret no more! Now Amstrad and C64 owners can unwrap their Mavericks as Digital Integration's *ATF* goes multi-format. Now Amiga owners can boil some monster skeletons down into bars of soap as *Bonecruncher* hits the 16-bit scene. And that isn't all...

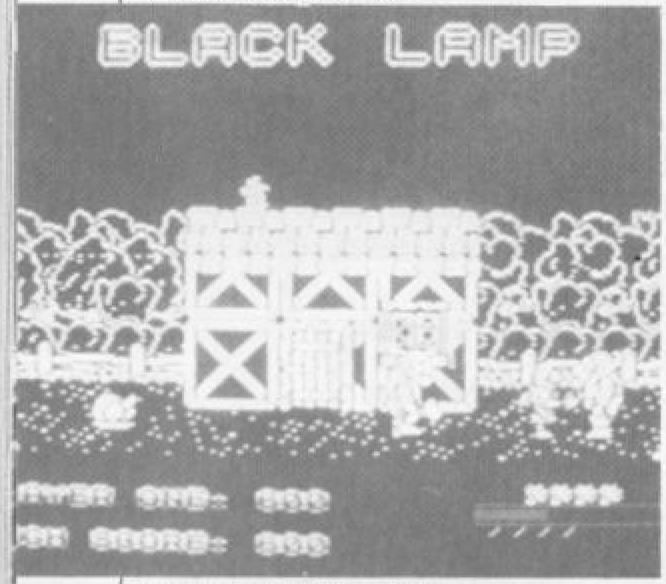
SPECTRUM

BLACK LAMP

Firebird £7.95cs

ST version reviewed issue 6 – ACE Rating 813

On the ST this one looked like an old Spectrum arcade adventure with great graphics and nifty animation: given that it lost the graphics and the animation on the way over, this was never going to be a great conversion. It's sluggish, colourless and unoriginal, with a dull game task into the bargain: just steer your jolly little jester round the castles and forests, collecting lamps and zapping nasties. There's some terrific 128K music – really top notch stuff – but the inevitable hits and poor control responses are simply too high a price to pay.



● ACE RATING 612

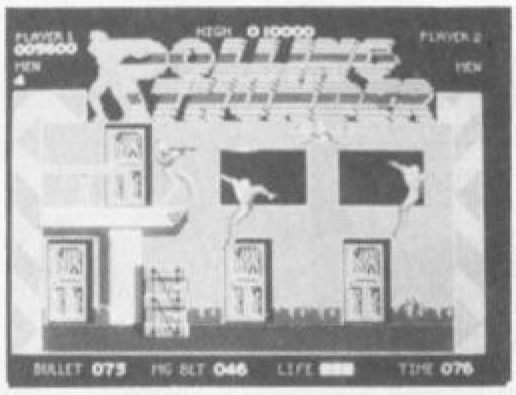
ATARI ST

SLAP FIGHT

Imagine £19.95dk

A classic case of too little too late, this one offers you at full price what budget releases have been doing better for the last six months or more. The shoot-em-up, collectable weapons action is terribly dated now, the graphics are uninspired and the sound is really rather poor. Coming out a month after the substantially better *Xenon*, the game doesn't have a great deal to recommend it.

● ACE RATING 568



ROLLING THUNDER

US Gold £19.99dk

Spectrum version reviewed Issue 6 – ACE Rating 715

Amstrad version reviewed Issue 6 – ACE Rating 690

Agent Albatross (that's you, folks) makes it onto the 16-bit machines in style. The plot's the same, but the graphics have been substantially imporoved. Unfortunately, the music and effects are dire. Gameplay is none too hot, either, but it's reasonable fun to play and addictive in the short-term. But like most coin-op conversions your interest will wane sooner rather than later.

● ACE RATING 725

BMX SIMULATOR

Codemasters £14.95dk

Almost identical to the Amiga version and so receives the same high rating.

● ACE RATING 810

AMSTRAD

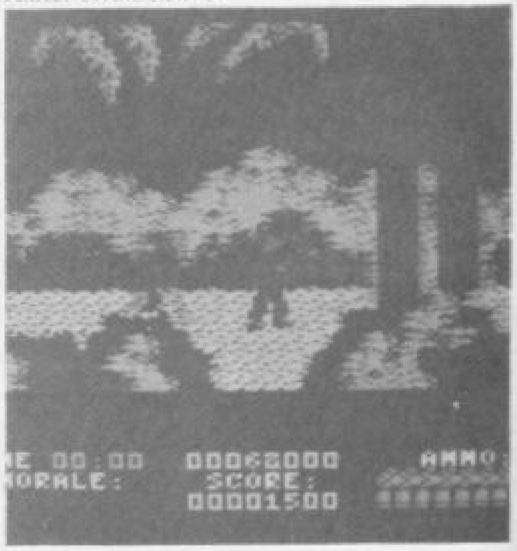
PLATOON

Ocean £9.95cs £14.95dk

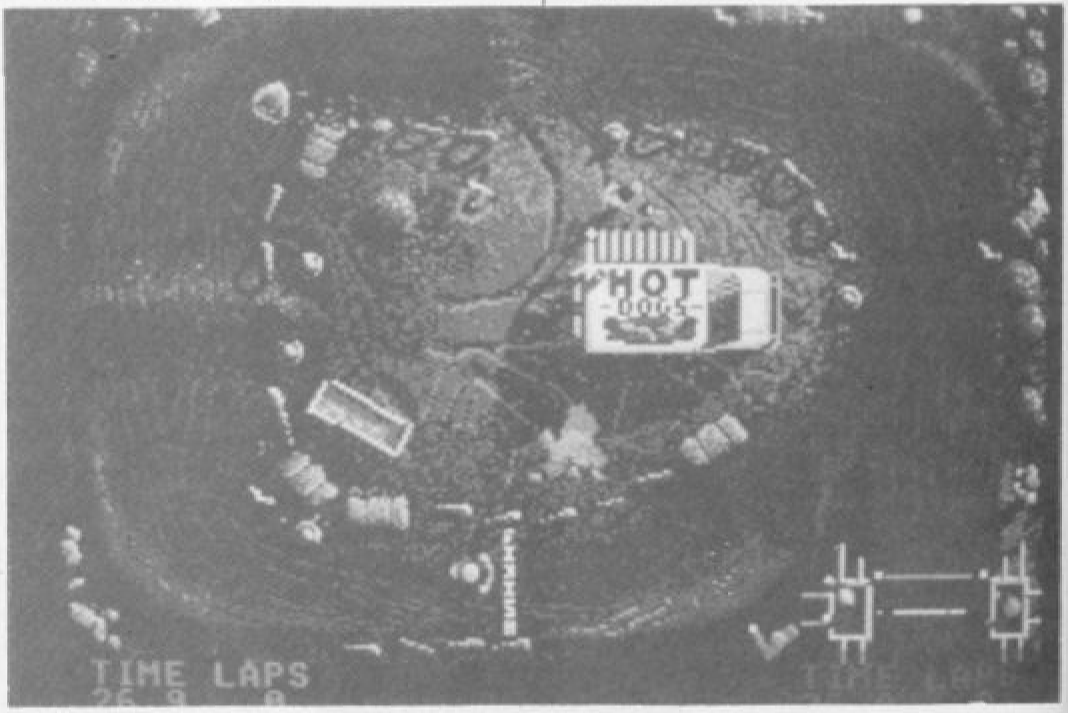
Spectrum version reviewed Issue 7 – ACE Rating 530

C64 version reviewed Issue 7 – ACE Rating 801

A worthwhile game on the C64, this one's rather less satisfactory on the CPC. The game format and sluggish controls mean that you're bound to take hits as you slog through the jungle, and without the dropped supplies of the C64 version there's no way to undo the damage. The graphics fall some way short of *Gryzor* or *Renegade*, making the whole thing rather unattractive.



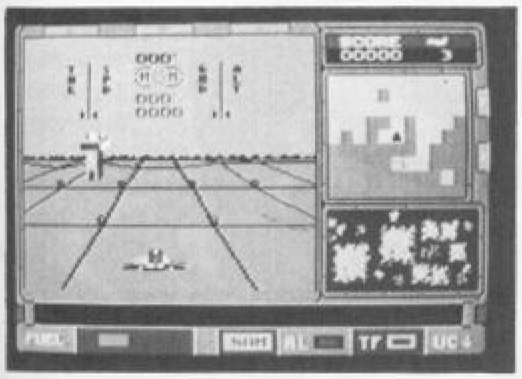
● ACE RATING 654



ATF

Digital Integration £8.95cs, £13.95dk
Spectrum version reviewed Issue 7 - ACE Rating 956

A fine game on the Spectrum, this one's still a hot property on the CPC. Work out your own mission objectives, load up with Maverick homing missiles and reach for the skies. Trash enemy fighters, jam incoming missiles and find new targets as you zoom over the contours of the 3D landscape. The game's fast, bright – it uses Arnold's 16-colour mode to good effect – and extremely playable. Enjoy!



● ACE RATING 959

C64

ATF

Digital Integration £8.95cs £12.95dk
Spectrum version reviewed Issue 7 - ACE rating 956

The C64 *Bobsleigh* may have been disappointing compared with its Amstrad and Spectrum counterparts, but DI'll have no such problem here. This is a cracking conversion with fast-moving terrain and good use of colour plus, crucially, all the gameplay of the original. The finely tuned combination of action and strategic depth just gives this one so much lasting value!

● ACE RATING 959

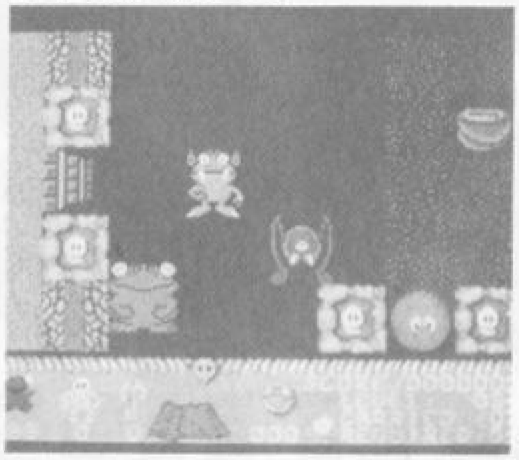
AMIGA

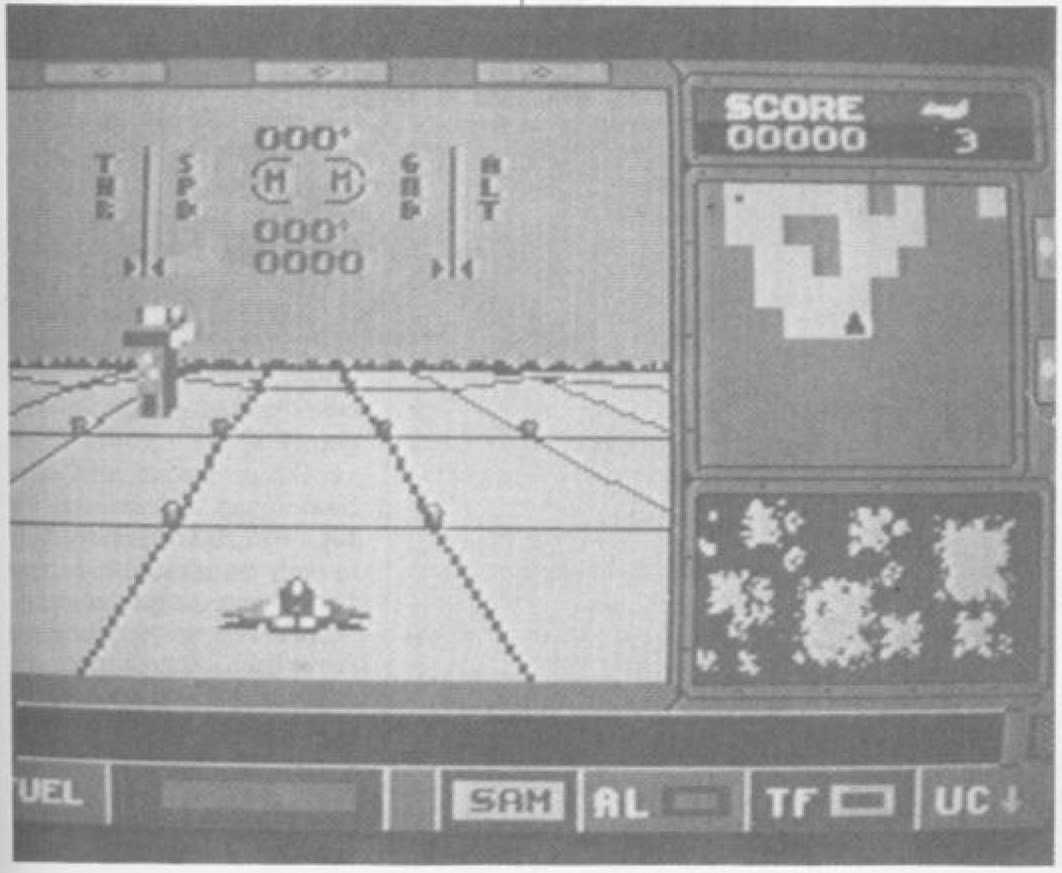
BONECRUNCHER

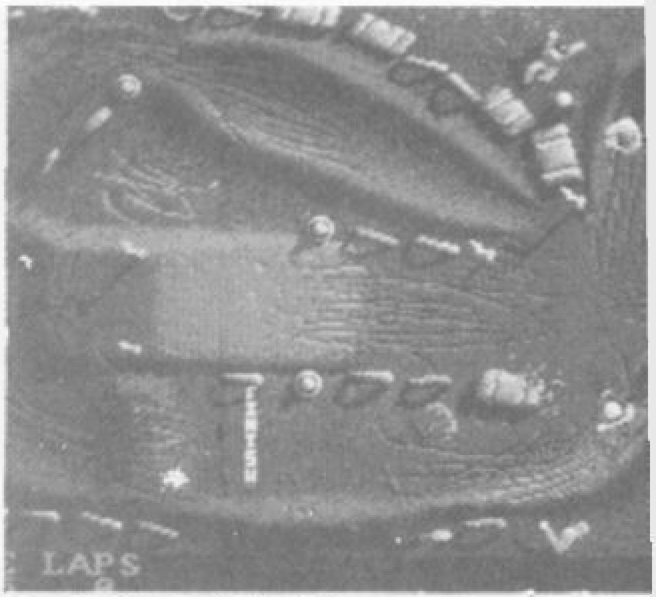
Superior Software £14.95dk
C64 version reviewed issue 6 - ACE Rating 943

The puzzles here are exactly the same as in the C64 version of this soap-and-skeletons toughie, so you can bet that the gameplay's well up to scratch. The graphics are rather better and the music's spot on, making it even more presentable. Unusual stuff for the Amiga and very welcome because of that, this is strongly recommended for thinking gamers – especially at that price.

● ACE RATING 948







BMX SIMULATOR

Codemasters £14.95dk

This addictive budget title was a very popular 8-bit game and is now appearing on the larger machines. Pedal your way around seven courses competing against either a friend or the computer. Great game with lots of addiction.

● ACE RATING 810

ROLLING THUNDER

US Gold £24.99
Spectrum version reviewed Issue 6 - ACE Rating 715
Amstrad version reviewed Issue 6 - ACE Rating 690

Wonderful music and effects. A shame, that the gameplay then, doesn't live up to expectations. Marginally better than the ST version.

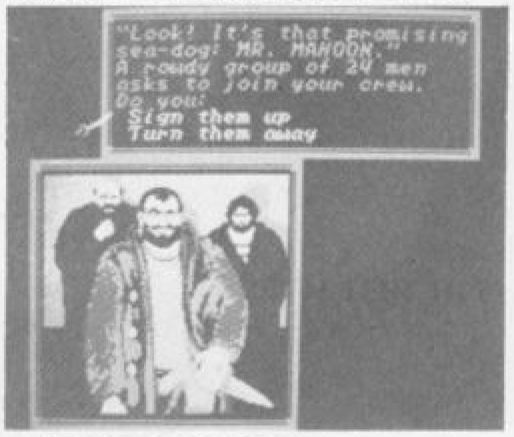
● ACE RATING 730

IBM PC

PIRATES

Microprose £24.95dk
C64 version reviewed ACE Issue 1 - ACE Rating 734

The game's been fleshed out a little since it first appeared on the C64, with the addition of several extra pictures. Your ship is slightly easier to control and seems to be a little bit nippier on the PC than on the C64. This improves the game slightly and makes it fun to play for a while.



"Look! It's that promising sea-dog! MR. MAHOON."
A rowdy group of 24 men asks to join your crew.
Do you:
Sign them up
Turn them away

● ACE RATING 756

In theory, the joy of playing computer games is that you don't need to go off and find a human opponent: the computer itself provides the opposition. That's all very well for games like chess – it's just you and your micro on equal terms – but when it comes to *Space Invaders* there's something missing...

DOUBLE TROUBLE...

You're not really competing against the computer at all in *Space Invaders:* there's no semblance of equality, because it can keep throwing aliens at you all night. It will always win in the end. The only thing in doubt is whether you'll get more points than the next guy before you get killed – but that's where the fun starts.

It's obvious really: if you're not on equal terms with the aliens, you're still on the same footing as other players. The game then becomes a multi-player 'let's see who can get the highest score' effort: the micro and software are now only part of the game experience, with all that human needling and boasting playing a major part in the proceedings. The game involved can be very simple – the simpler the better, some would say – and yet have you totally hooked, simply because you're trying to beat other people. How much better would it be then if you could involve the other people directly in your game?

Games programmers have been trying to encourage this sort of group game-playing recently by getting two or more players on screen at once. Games with two-player options have been with us since the dawn of the coin-op age, but until recently they've only had one person playing at any one time. Players take turns at games like this, handing over when they lose a life. This is *alternating* two-player action.

and as such it isn't really any different from the single-player game: the competition here is still just for high scores.

True multi-player games allow several people onto the screen simultaneously, either competing or (more recently) cooperating with each other. This kind of game has a long history too – look at *Pong*, for example – but it's only recently that two-play has really taken off. Two-player racing games are all the rage, with Code Masters' range of 'simulators' dominating the budget charts for most of last year.

Traditional one-on-one sport or martial arts games aren't the only growth area for multi-player action. Cooperative two-player shoot-em-ups are big business too – team work against a bunch of aliens is all the rage – while advances in keyboard and joystick scanning are already offering three-player options on some C64/128 and ST games. With a specially-made cable, Microdeal's forthcoming ST Rambo-em-up *Leatherneck* will be able to take *four* players at once – all on joystick! This really is a team we're talking about now – and the expansion needn't stop there.

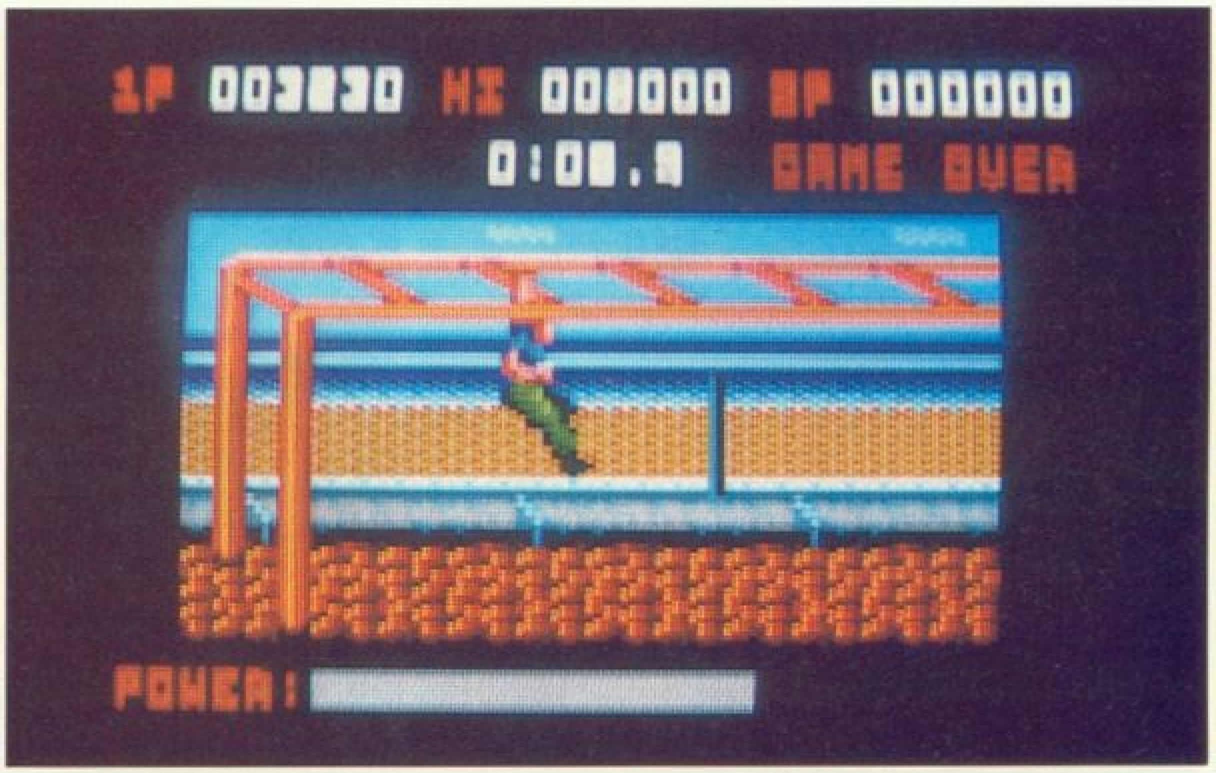
Hybrid Arts can get a dozen or more people playing at once on their *MIDI Maze* by linking STs together, but you'll need a lot of machinery in one place if you want that size of setup. The breakthrough will come when arcade games can run down the phone, linking you into one enormous game universe. Sounds fanciful? It's already happening in the States, where a major online service offers subscribers a real-time flight simulator. You want a hundred players from across the USA fighting it out in the skies? You want people who've never met teaming up to crew a bomber? Then be sure to grab a copy of ACE next month for the low-down on *Air Warrior*, and how a modem could change your ideas on games.

BMX SIMULATOR

Codemasters

Spectrum	£1.99cs	
Amstrad	£1.99cs	
C64/128	£1.99cs	
Amiga		£14.99dk
Atari ST		£14.99dk

This marvellous simultaneous two player bike-em-up has very recently made it onto the 16-bit machines, and how! You have to compete against a friend (or the computer) over a maximum of seven courses. The bumps and berms etc all affect your bike realistically and help to make the game incredibly addictive and tough. Watch out too for Codemasters *Professional BMX Simulator* which provides an even tougher challenge.



Combat School - Amstrad. Waggle your way to glory.

COMBAT SCHOOL

Ocean

Spectrum	£7.95cs	
Amstrad	£8.95cs	£12.95dk
C64/128	£8.95cs	£12.95dk

The latest in the long line of 'waggling' athletics games. This one's got a military flavour to it though, and seven separate stages. There's no chance to cooperate with your friend, though, as each player plays separately – for example, on the first stage both players have to waggle their way across an assault course, and the screen is split horizontally with each player's character occupying one half. Other stages, however, do allow the players to compete – the rifle range for example. *Combat School* is certainly guaranteed to make your wrists ache, and provides a lot of fun for both one or two players.

DRUID I/II

Firebird

Spectrum	£7.95cs	
C64/128	8.95cs	£12.95dk
Amstrad	£7.95cs	

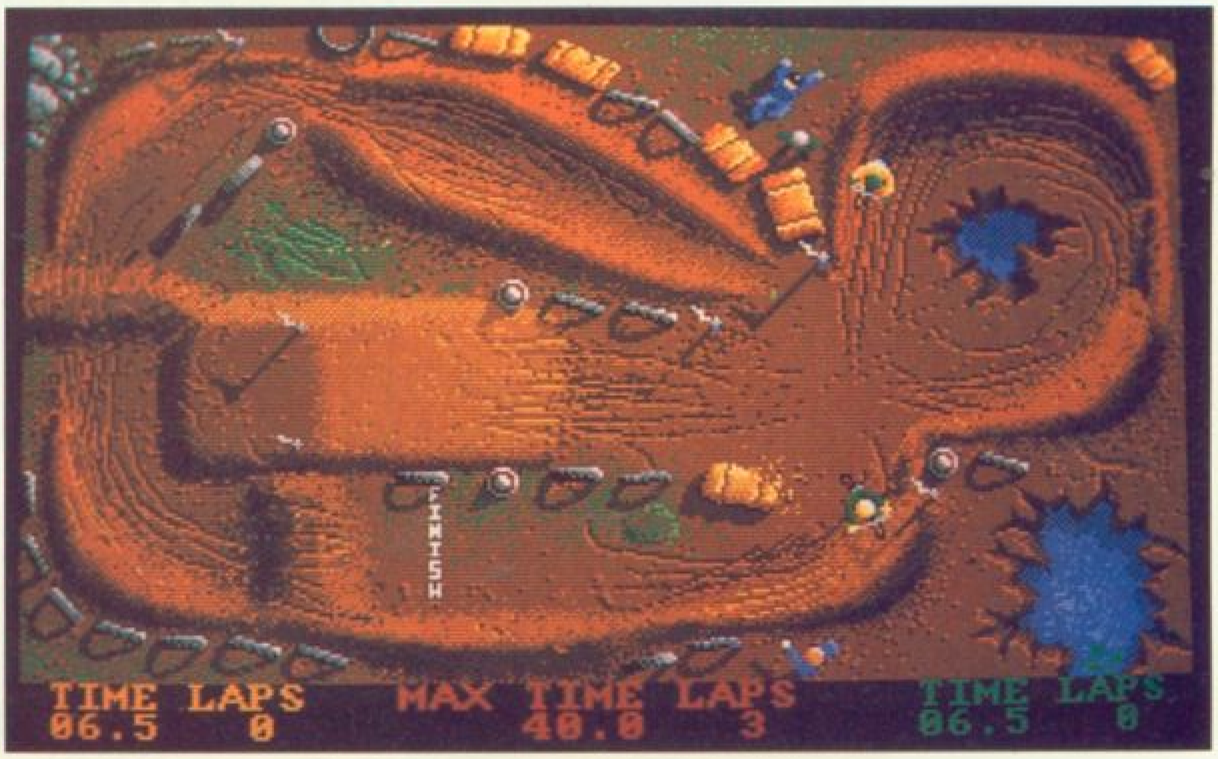
Best of the *Gauntlet* derivatives as the druid copes with the forces of evil. In both games the druid is equipped with a number of spells for zapping enemies or causing other effects. In the original game one of the spells creates a sidekick called Golem – the second player.

HARVEY HEADBANGER

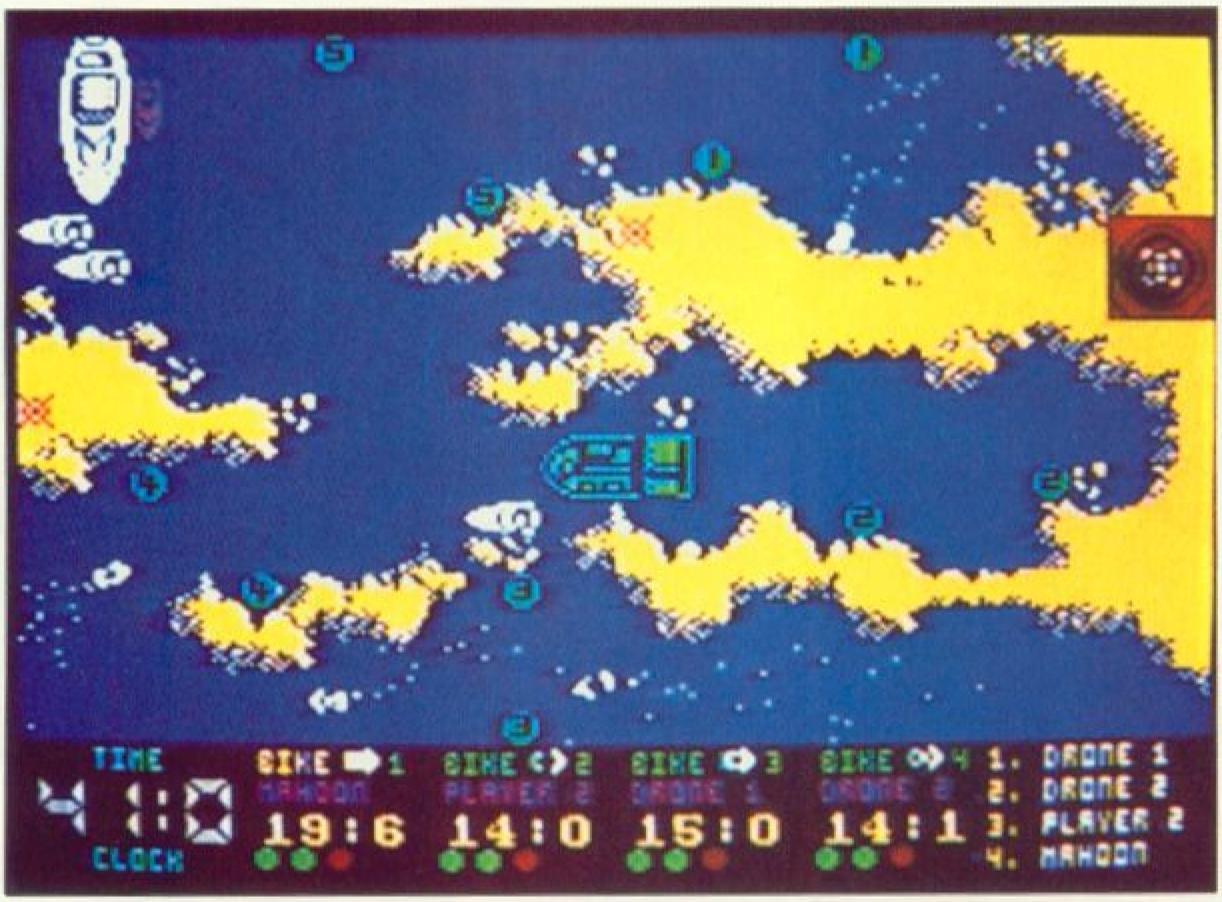
Silverbird

C64/128	£1.99cs
Amstrad	£1.99cs
Spectrum	£1.99cs

Startlingly original and tremendously playable, this boozy budget number combines elements of classic coin-op *Qix* and



BMX Simulator - Amiga. Career around the BMX courses and try to complete the set number of laps within the time limit.



Jet Bike Simulator - Spectrum. Invite a friend around for some watersports.

ancient oriental boardgame *Go* in its brain-bending gameplay. As your spherical character swings round the screen, hand over hand, he trails colour behind him. Surround areas of your opponent's colour with your own and you'll make cocktails (very handy): surround the opponent himself and you'll win the bout. Five levels of computer opposition make this one great value as well as great fun – and with a human Player 2 it's even better!

IKARI WARRIORS

Elite

Spectrum	£8.99cs	£12.99dk
C64/128	£9.99cs	£14.99dk
Amstrad	£9.99cs	£11.99dk
Atari ST		£14.99dk
IBM PC		£19.99dk

A classic amongst two-player games because it not only features frenetic action but demands cooperation and agreed tactics between the players. It's basically a two-player version of *Commando* with tank driving thrown in.

The fighters make their way up a downward scrolling screen, initially armed with machine guns and grenades. You'll encounter enemy soldiers, pill boxes, tanks, helicopters, grenade launchers and much more. The best feature is when you can hop into a tank and drive that around crushing the enemy, while player two follows safely behind until he can find his own tank. Also measures up superbly as a one-player game.

INTERNATIONAL KARATE

System 3

C64/128	£6.50cs	£12.99dk
Atari ST		£19.99dk

Best of the many ST karate chop-em-ups that are now available. You have 16 separate moves to try out against your opponent, in front of such wonderful backdrops as the Sydney Opera House and Venice. This is pure competition stuff; you'll want to bash and slug your opponent as much as possible to impress the umpire and you get nothing for showing mercy.

JET BIKE SIMULATOR

Codemasters.

Spectrum	£4.99cs
Amstrad	£4.99cs

This is one of Codemasters 'plus' range, which means that for just a couple of pounds more than the usual £1.99 that Codemasters charge for 8-bit games, you get two versions of the game – normal and expert. In *Jet Bike Simulator* you and a friend can charge around several water courses on your jet bike competing against two computer drones. Simple but addictive fun.

MATCHDAY II

Ocean

Spectrum	£8.95cs	£14.95dk
Amstrad	£8.95cs	£14.95dk
C64/128	£8.95cs	£12.95dk

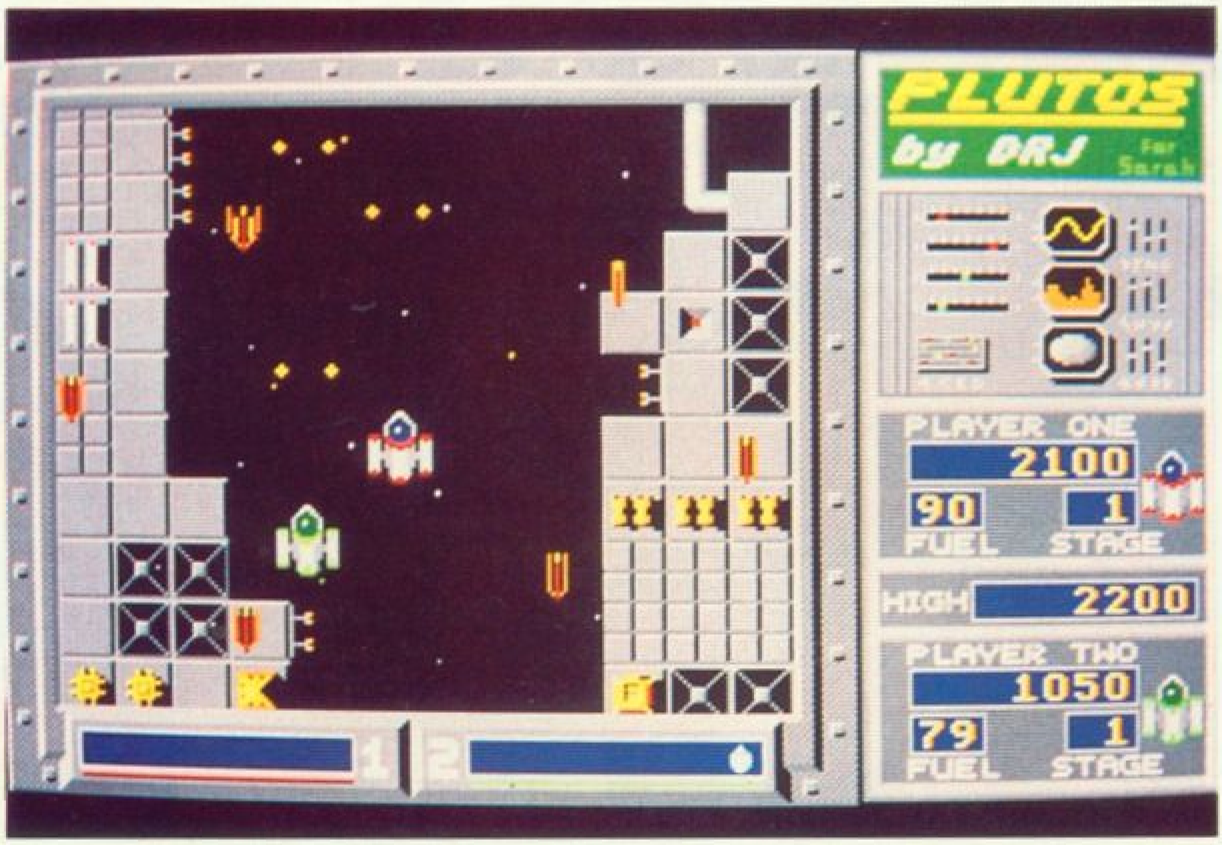
The definitive football game for 8-bit micros. You don't get to compete just against the computer though – you can play against a friend (enemy?) if you like, or the two of you can cooperate by ganging up on the computer, which makes for plenty of fun. Terrific stuff for footbally fans, and a game that really shows how two-player options can add sparkle to an otherwise standard format.

PLUTOS

Tynesoft

Atari ST	£14.95dk
Amiga	£14.95dk

One of the first classic 16-bit shoot-em-ups, *Plutos'* 2-player option really does double the fun factor. We're not quite sure exactly how many levels of play there are in the game, but it takes perseverance to get beyond level 30 on your own – add a partner and you'll really



Plutos -Amiga. Should you steal points from your partner, or work together for progress?

get shifting up to level 60 and beyond.

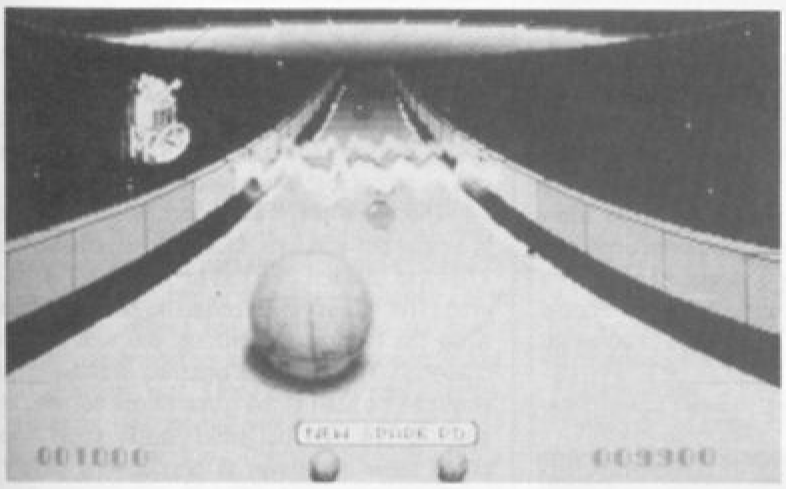
However, the best thing about the game is the way you can choose your tactics to suit your temperament. On the one hand, 2-player *Plutos* can be a competitive blast-out as you both struggle to grab more bonuses, more aliens, and more points than your colleague. On the other hand, if you're in a pioneering mood, you can work together very effectively, trashing the opposition in unison and moving further through the levels to as yet undiscovered hunting grounds.

Simple, visually attractive, and a real adrenalin boost at the higher levels, *Plutos* is pure 2-player perfection. There's nothing in it that you haven't seen in a shoot-em-up before, but what's there represents classic simplicity that's hard to resist.

ROADWARS

Melbourne House.

Spectrum	**£8.99cs**	
C64/128	**£9.99cs**	
Atari ST		**£19.99dk**
Amiga		**£19.99dk**



Roadwars - Amiga. Blow away the rogue panels - or each other.

If you're after cut-throat competition with a friend then *Roadwars* could provide the answer. You take charge of one of two Battlespheres that career down the continually scrolling roads of Armageddon. If you're feeling cooperative you can help each other to take out the rogue panels that are to be found at either side of the road. But if you're feeling mean you can compete with your friend and try to force him off the road. The Amiga version' may be by far the best looking, but the Spectrum version actually has more playability.

ROOM TEN

CRL

C64/128	**£8.95cs**	**£14.95dk**
Spectrum	**£7.95cs**	
Amstrad	**£8.95cs**	**£14.95dk**

A split screen gives each player a view from behind his own bat in this zero-gravity 3D *Pong*-derivative. Written by Pete Cooke of *Tau Ceti* and *Academy* fame, the game uses great point-of-view 3D graphics to help you gauge where the ball is. Computer opponents possessing various strengths are on hand just in case you can't find a human being to play against, but either way it's great fun.

SKULLDIGGERY

Nexus (distribution now uncertain)

Atari ST	**£19.95dk originally**

Probably the best *Boulderdash* clone around, so if you haven't got an ST you can eat your heart out. Even if you have, you may experience some frustration since Nexus ceased trading recently and the future of *Skulldiggery* is in doubt.

That's all the bad news, however. The rest is all good. Unlike the original *Boulderdash*, there's a two-player option in *Skulldiggery* where you fight madly to grab as many diamonds as you can before your opponent. The screen is split horizontally, with each player viewing the map area surrounding his current position. If you both wander into the same area, you can then see each other on both screens.

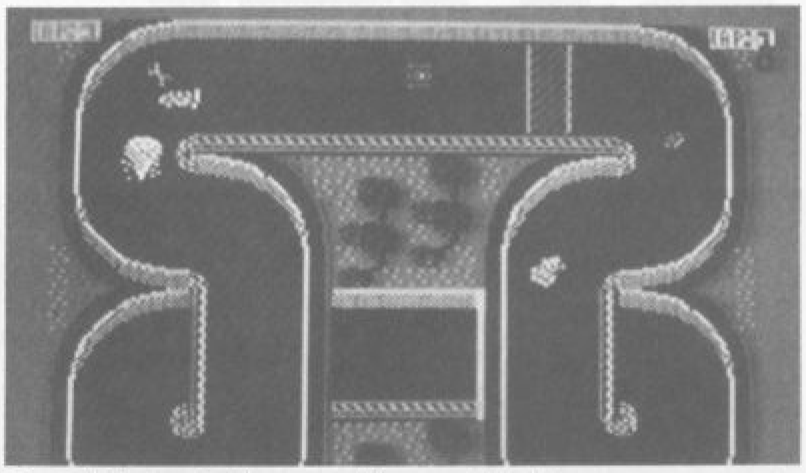
One of the best things in double-*'diggery* is, however, nothing to do with collecting diamonds or going for higher scores. It's the sheer ecstasy of ambushing your opponent and splatting him with a carefully nudged boulder just as he's about to collect his final diamond. Of course you'd never do a thing like that, would you? Oh yes you would...

SUPER SPRINT

Activision

C64/128	**£9.99cs**	**£14.99dk**
Spectrum	**£9.99cs**	
Amstrad	**£9.99cs**	**£14.99dk**

This simple overhead-view racing game conceals a fascinating mix of cooperation and competition in two-player mode. You want to come in ahead of your opponent and collect enough spanners for a tune-up too, but it's vital that one of you beats the computer-controlled 'drone': otherwise it's game over for both of you. Do you leave the spanners for the other player if he needs a tune-up - extra speed, better handling etc - or play dog-in-the-manger and risk both of you losing on the next track? Interesting stuff: who'd have thought a racing game would turn into 'them against us'.



Super Sprint - Spectrum. Grab those spanners before anyone else does!

...TRAZ

Cascade

Spectrum	**£9.95cs**	
Amstrad	**£9.95cs**	**£14.95dk**
C64/128	**£9.95cs**	**£14.95dk**
IBM PC		**£19.95dk**

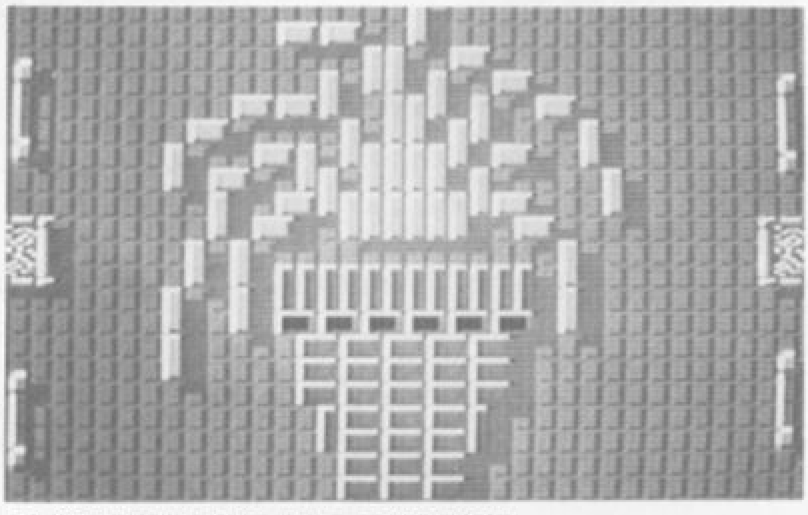
Cooperation is a must if you hope to complete any of this *Breakout* clone's 64 screens. In two-player mode you'll get nowhere fast if you try to compete with a friend because the action is fast and furious and a lost life affects the both of you. Cooperation is neccessary simply because of the way the game is structured. When you're in two-player mode you and your friend can find yourselves each with two bats to control - this is not normally too much of a problem, except when you consider that control of the bats switches randomly between the players. Wacky fun that's best enjoyed by two.

WAY OF THE EXPLODING FIST

Ricochet.

Spectrum	**£1.99cs**
C64/128	**£1.99cs**
Amstrad	**£1.99cs**

Should you own an 8 bit machine and you're on the look-out for a high class beat-em-up, then look no further than this little number. Originally released at full price by Melbourne House, you can now snap this game up at a bargain price. Like *International Karate*, you've got 16 moves to use against your opponent in the fight to impress the judge. Manic cut-throat action for those who like their competition fierce.



Traz - C64.Random bat switching will test your reactions to the full.

STRATEGY SPECIAL

What is it about strategy games that attracts a certain kind of games player? Could it possibly be something to do with long-term interest? With a bit of strain on the old grey matter? With the varying game-play from game to game? With the relentless strength of the computer opposition? People are beginning to realise that strategy games can provide much more of a lasting challenge than the average shoot-em-up coin-op conversion. When did you last lie awake all night devising a sure-fire strategy to defeat a particular wave of *Space Invaders*?

Since the arrival of 16-bit machines in the games market, the future for the strategy genre looks brighter than ever. Programmers quickly acquaint themselves with new machines and we shouldn't have to wait long before we start to see highly imaginative strategy epics that involve the player to a degree nigh on impossible on an 8-bit machine. Rainbird's *Universal Military Simulator* is just the beginning....

So what's the current state of play on the strategy games front? Here are the latest contenders to test your mettle on the battlefield.

OVERLORD

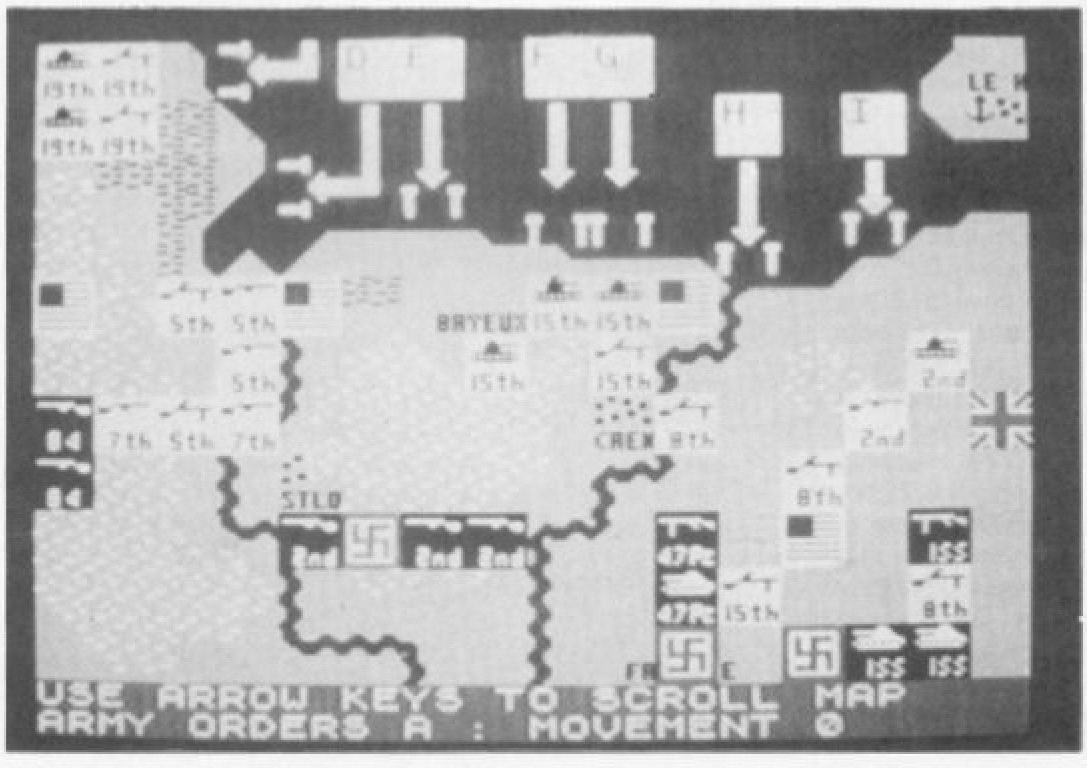
CCS
Spectrum **£9.95cs**

June 6th 1944 saw the start of operation Overlord – the invasion of Normandy by the allied British, American and Canadian forces. This latest release from CCS attempts to re-create this operation, widely regarded as *the* decisive western battle of the Second World War. Inspiration for the game was drawn extensively from the Max Hastings book 'Overlord'.

The program is for one player and allows you to control the allied forces only, though there are three difficulty levels. The object of the game is to land your forces, secure the beaches (to allow reinforcements to land) and then break out and reach the right hand edge of the game map. The game can end before then, however, should either side's effectiveness be reduced to below 40 per cent.

The game breaks down into two broad phases – the landing of reinforcements and the issuing of orders. Your limited supply of reinforcements can only come ashore at beaches which are in your control and which are clear of other units. Issuing orders is effected unit by unit, and involves placing a cursor at the required destination, first for the unit's centre, and then for each of its flanks. Once all the units have been positioned, movement of the allies occurs – followed by any resulting combat. Then the German forces move and combat is resolved again.

The game plays well, and the screen layout is simple but effective, though mistakes are hard to correct so each step has to be carefully considered. The easiest level poses no great problems while the hardest will provide you with a tough challenge. The additional beaches available to the player at the start of the game (those not used for the real landings but which easily could have been) allow the player to play several 'what if' scenarios.



USE ARROW KEYS TO SCROLL MAP
ARMY ORDERS A : MOVEMENT 0

SPECTRUM - *Overlord*

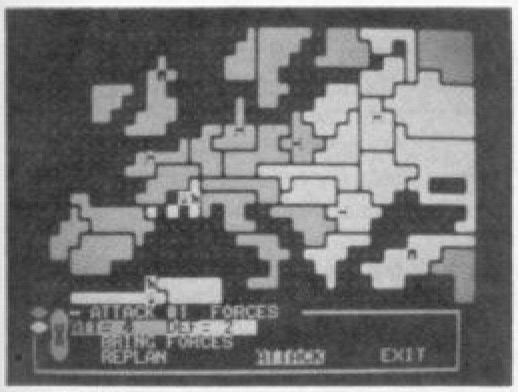
OPPOSITION 07 EASE OF USE 07
DISPLAY 08 GAME DEPTH 08
ACE RATING 845

LORDS OF CONQUEST

Electronic arts
C64/128 **£9.95cs** **£12.95dk**
IBM PC **£14.95dk**

Up to three players can compete against each other in this game of conquest. The idea's very simple – an area of land is divided into irregular shapes (like counties) and each player tries to conquer the opponent's territories. There are some 20 pre-set areas including simplified maps of the World, America, Europe and the Middle East. You also get the chance to design your own *maps or you could even request the computer to* generate a unique map. Once you've settled on which map you're going to use, the computer randomly distributes resources throughout the game area. These take the shape of small icons representing cities etc. Next comes the divvying up of the territories. The players each select a territory in turn until all are occupied – then battle commences.

There are several aspects of the game which the player can define, including the degree to which chance will influence the result of a battle, or the amount of resources available at the start of the conflict. The instruction manual is not terribly helpful, but it doesn't take long to pick up the rules of the game, and once you have it becomes very entertaining – especially if you play with a friend or two.



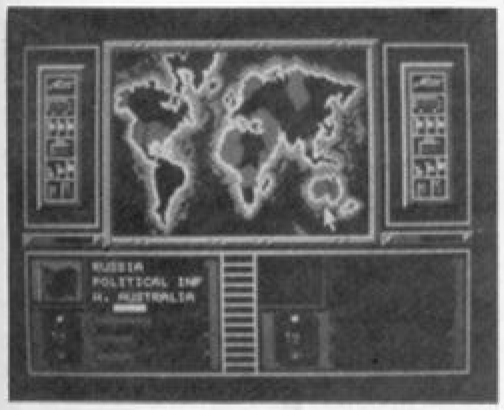
PC - *Lords Of Conquest.*

OPPOSITION 07 EASE OF USE 06
DISPLAY 06 GAME DEPTH 05
ACE RATING 835

◆

POWER STRUGGLE
PSS
Atari ST **£14.99dk**

Superpower politics raise their ugly head in this PSS strategy game that offers one or two players the chance to influence countries through political, economic and military means. Each game turn allows the player to do as much invading, persuading and conniving as possible within a time limit. Once the time limit expires, the game map of the world updates and you start on the next turn. The game is limited to a few options only and the computer opponent is not much of a match for the averagely competent megalomaniac.



ST - *Power Struggle*

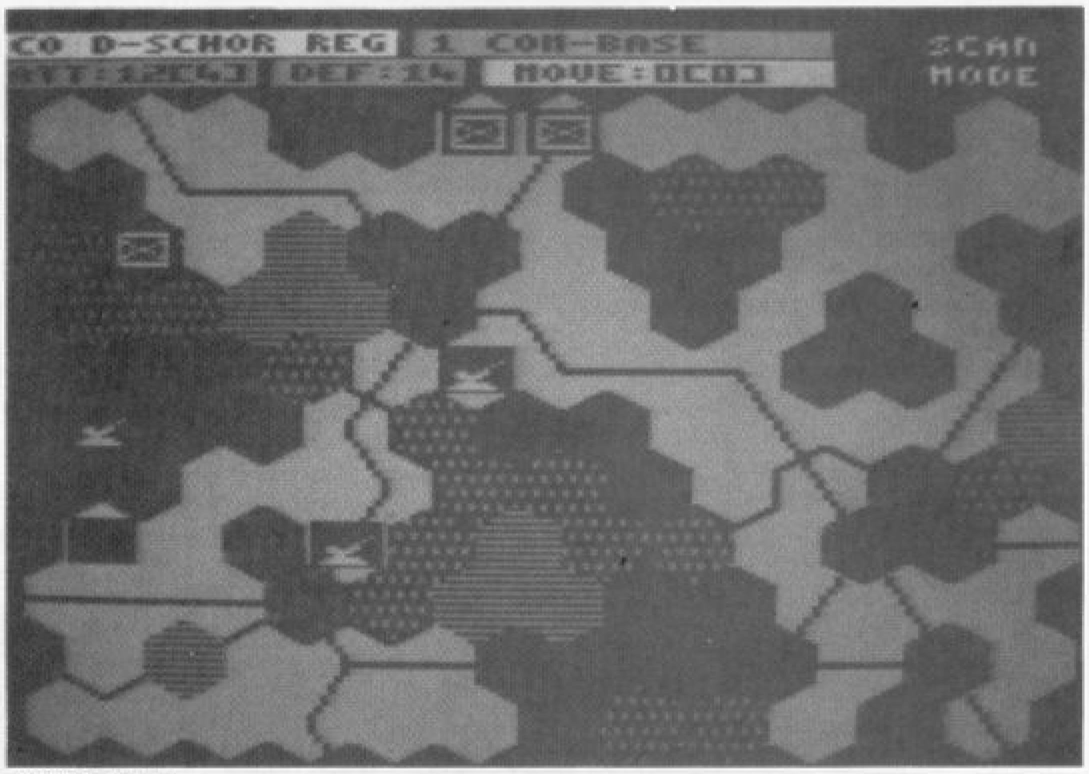
OPPOSITION 05 EASE OF USE 07
DISPLAY 06 GAME DEPTH 05
ACE RATING 620

◆

FIREZONE
PSS
Amstrad **£12.99cs** **£17.99dk**

This one or two-player wargame set in the 21st Century comes complete with a scenario designer program that allows you to design and fight your own battles. The disk version of the game comes with nine pre-set scenarios while you only get three on cassette. The terrain for each game is divided into hexagons and the victory conditions for each scenario are roughly the same, i.e. you have to destroy all the opponents pieces or force them to retreat. While the display is colourful, the screen updating is tediously slow, as the screen is re-drawn rather than scrolled. *Firezone* breaks down into four sections: moving your forces, firing, waiting for your opponent's moves and firing again. Unfortunately, much of the damage either incured or dished out seems to be left to chance, which narrows your scope for tactical planning. A simple wargame then that provides a nice design feature and a vicious computer opponent but not much else.

OPPOSITION 08 EASE OF USE 06
DISPLAY 07 GAME DEPTH 06
ACE RATING 710



AMSTRAD - *Firezone*

16-bit strategy explosion...

There are two distinct strands in the strategy world. First, you've got the conflict scenario; second, you've got strategy simulations, in which the strategic element is, for example, commercial or political (as in the old game Dictator).

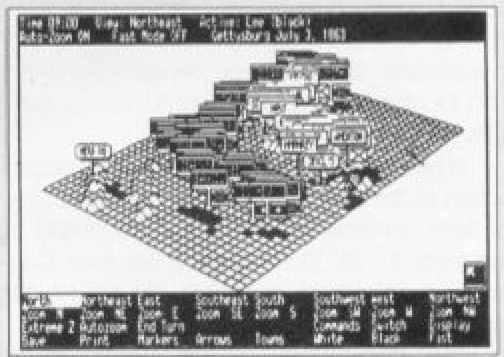
Most 8-bit strategy software has had to make compromises. Large amounts of data mean less room for graphics, and the depth of play can be limited by processing power. These problems do not apply to anything like the same extent with the new 16-bit machines, so what changes can we expect to see?

First, better user interfaces. Rainbird's Universal Military Simulator offers user-definable maps and a large number of control screens to help the player 'drive' the simulation. In addition, the extra memory allows larger simulations and therefore greater strategic depth. It also means the program runs faster.

Second, better graphics. With all that extra RAM and higher resolution, there's now room for digitised maps, diagrams, and even animation sequences.

Finally, greater depth of play. Software houses can use more powerful development tools on the new machines to produce more intricate software, with wider playing options.

All this adds up to the possibility of strategy games moving more and more to the top of the games charts. There's a good reason for this – there just isn't any room in a 20p-a-game arcade environment for the development of anything other than scoring tactics – strategy just can't enter into it. For this reason, pure-blooded strategy, together with role-playing, has always been the poor cousin of straight-forward arcade action – but stand by for big changes in the days ahead.



Rainbird's Universal Military Simulator on the PC – sign of changes to come in strategy software?

PLAY IT... BY MAIL

Play By Mail (PBM) gaming has grown vastly in popularity over the last few years – adventure and strategy, trade and conquest, game-scenarios of all kinds and involving hundreds of players simultaneously can now be played by post.

There have been excellent human and computer moderated PBM games around for years now; judging by the standards of many new games displayed at the recent Third British Play By Mail Convention, they will be with us for years to come. Check out the following goodies that were launched at the Convention.

TIME TRAVEL

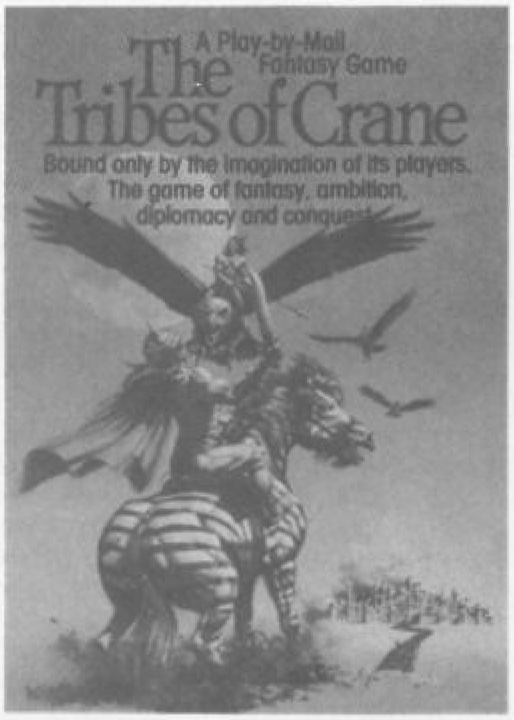
One of the most interesting new concepts in Play By Mail gaming displayed was the introduction of a new dimension: time. Vorcon games (59 Juniper, Birch Hill, Bracknell, Berks RG12 4ZC) have now started running their new computer moderated game The *Time Sentinel*. In the game, space-time is regulated by a crystal located on a far off world. Somehow, the crystal shatters and its fragments fall through time – sometimes even ripping the fabric of time itself.

You join a number of other independent members of the space corps in a journey through time to reassemble the crystal. The clever bit is that the game environment has only fifty-two physical locations, but each location exists in many timescales (not necessarily containing the same thing).

Here's a good example of the way the game system works: you find a part of the crystal in location 36 during year 50. You have something to do in a different location in year 40; this action may take you 12 years to complete. Therefore you deposit the crystal at a location in, say, the year 51 before travelling back to year 40.

When you begin this time-consuming action in the year 40 the crystal is nowhere to be seen – come completion of the action in the year 52 it's there waiting for you! Confused? It gets worse, but that's enough for this month!

The possibilities of this game really become apparent when you consider the large number of other players all moving about through time in the same world (and among the same 52 locations). Clever stuff.


A Play-by-Mail Fantasy Game
The Tribes of Crane
Bound only by the imagination of its players. The game of fantasy, ambition, diplomacy and conquest

While play-by-mail games continue to grow in popularity it's nice to see that some of the old favourites are still going as strong as ever. *The Tribes of Crane* is still regarded by many as one of the best tribal games and it looks to be going from strength to strength - two years after it's birth. You don't get many arcade games lasting that long!

BRAVE NEW WORLD

As far as computer programming goes, this is a real head turner. New to the PBM scene (but old hands at the boardgaming scene) Standard Games' *Dark Blades* could well prove to be a classic. Developed from their board game of the same name, *Dark Blades* is an intelligent computer moderated Fantasy Role Playing (FRP) game. Within the computer there exists a 'real world' containing (claim Standard) thousands of creatures with characters built up from up to seventy characteristics.

Over 100 players battle it out in the Land of Dark Blades for survival. The game boasts a lot of interesting features, although the most attractive element must be the computerisation of characters to the point where they are almost as capable as individual human players. Standard reckon that the game could play itself – sadly, the only way to prove this would be for every player to drop out and we don't really want that, do we?

Exact details of the PBM version of *Dark Blades* remain uncertain at the time of going to press, but we can tell you that the price is very cheap and the startup pack is VERY impressive indeed. The address? Standard Games PBM, Arlon House, Station Road, Kings Langley, Herts WD4 8LF.

TEAMWORK

Many Play By Mail games are moderated with a mixture of computer efficiency and human ingenuity. Two good new examples of such games are *In Dubious Battle?* (by Pandem Games, PO Box 127, Belfast BT9 5ED, Northern Ireland) and *Order Of Chaos* (under development by Odde Fellows & Co from Gloucestershire).

Both games enable you to play 'God'. In *In Dubious Battle* your aim is to become chief deity (the Godfather?), by gaining power through support from the mortals of the world below you or from gaining control of Elysium (Land of the Gods). The clever touch to this game is the use of two playing arenas.

Order Of Chaos, once launched, will be equally interesting. In a nutshell this game takes over from the Christian God after Creation. It is the players' task to forward the process of Evolution in the battle of the World Shapers against the Lord of Chaos. You navigate the River of Life with the aim of creating a base for Civilisation... Far too complex to sum up in a single page review, but watch out for further coverage in a future issue of ACE.

● So there we have it, Advanced Computer Entertainment in the world of Play By Mail gaming. In future issues we'll be bringing you the latest reports, reviews, and gossip from this growing area of entertainment. See you next month...

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- Suitable for left or right-handed players
- Rubber suckers for fastening to smooth surface
- Recommended retail price £14.95

WE ARE THE CHAMPIONS

Ocean

Stunning value compilation including Barbarian, Renegade, Rampage, International Karate + and Super Sprint.

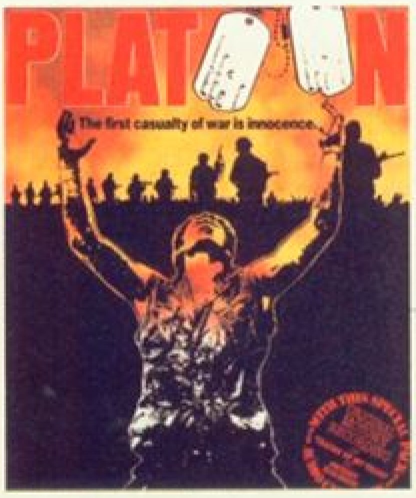
Version	RRP	ACE price	Order code
Spectrum cass	9.95	**6.95**	AC143SC
Spectrum disk	17.95	**13.95**	AC143SD
CBM 64 cass	9.95	**6.95**	AC143CC
CBM 64 disk	17.95	**13.95**	AC143CD
Amstrad cass	9.95	**6.95**	AC143AC
Amstrad disk	17.95	**13.95**	AC143AD

ARKANOID 2

Imagine

The Revenge of Doh. Another impossibly addictive break-out challenge.

Version	RRP	ACE price	Order code
Spectrum cass	7.95	**6.25**	AC144SC
CBM 64 cass	8.95	**6.95**	AC144CC
CBM 64 disk	12.95	**10.95**	AC144CD
Amstrad cass	8.95	**6.95**	AC144AC
Amstrad disk	14.95	**11.95**	AC144AD


PLATOON
The first casualty of war is innocence.

IMPOSSIBLE MISSION 2

US Gold/Epyx

Follow up to a stunning classic featuring the evil Professor and his robots.

Version	RRP	ACE price	Order code
CBM 64 cass	9.99	**7.95**	AC145CC
CBM 64 disk	14.99	**11.95**	AC145CD
Amstrad cass	9.99	**7.95**	AC145AC
Amstrad disk	14.99	**11.95**	AC145AD
Atari ST	19.99	**15.95**	AC145ST

BOBSLEIGH

Digital Integration

Superb simulation of the exciting winter sport.

Version	RRP	ACE price	Order code
Spectrum cass	9.95	**7.95**	AC155SC
CBM 64 cass	9.95	**7.95**	AC155CC
CBM 64 disk	14.95	**11.95**	AC155CD
Amstrad cass	9.95	**7.95**	AC155AC
Amstrad disk	14.95	**11.95**	AC155AD

ARCADE FORCE 4

US Gold

4-game compilation of Road Runner, Indiana Jones, Gauntlet and Metro Cross.

Version	RRP	ACE price	Order code
Spectrum cass	9.99	**7.95**	AC147SC
Spec+3 disk	14.99	**11.95**	AC147SD
CBM 64 cass	9.99	**7.95**	AC147CC
CBM 64 disk	14.99	**11..95**	AC147CD
Amstrad cass	9.99	**7.95**	AC147AC
Amstrad disk	14.99	**11.95**	AC147AD
Atari ST	24.99	**19.95**	AC147ST

TARGET RENEGADE

Imagine

Violent follow up to the violent combat game.

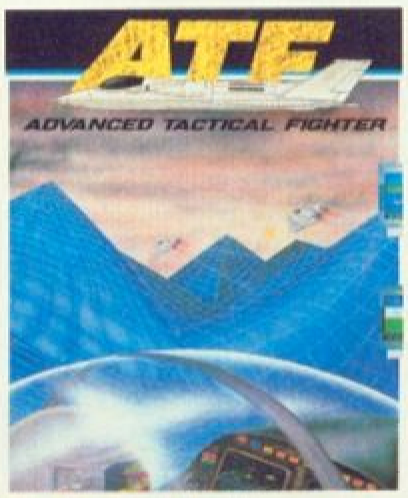
Version	RRP	ACE price	Order code
Spectrum cass	7.95	**6.25**	AC142SC
Spectrum disk	14.95	**11.95**	AC142SD
CBM 64 cass	8.95	**6.95**	AC142CC
CBM 64 disk	12.95	**10.95**	AC142CD
Amstrad cass	8.95	**6.95**	AC142AC
Amstrad disk	14.95	**11.95**	AC142AD

A.T.F.

Digital Integration

ACE-raved combat flight simulator with stunning 3D graphics and high playability.

Version	RRP	ACE price	Order code
Spectrum cass	8.95	**6.95**	AC154SC
Spec+3 disk	12.95	**9.99**	AC154SD
CBM 64 cass	8.95	**6.95**	AC154CC
CBM 64 disk	12.95	**8.95**	AC154CD
Amstrad cass	8.95	**6.95**	AC154AC
Amstrad disk	13.95	**10.95**	AC154AD



PLATOON

Ocean

Powerful action based on the award-winning war film.

Version	RRP	ACE price	Order code
Spectrum cass*	9.99	**6.95**	AC136SC
Spectrum disk	14.95	**11.95**	AC136SD
CBM 64 cass	9.99	**7.95**	AC136CC
CBM 64 disk	14.99	**11.95**	AC136CD
Amstrad cass	9.99	**7.95**	AC136AC
Amstrad disk	14.99	**11.95**	AC136AD

COMBAT SCHOOL

Ocean

The Konami arcade game featuring seven gruelling events.

Version	RRP	ACE price	Order code
Spectrum cass	7.95	**6.25**	AC131SC
CBM 64 cass	8.95	**6.95**	AC131CC
CBM 64 disk	12.95	**10.95**	AC131CD
Amstrad cass	8.95	**6.95**	AC131AC
Amstrad disk	14.95	**11.95**	AC131AD

CALIFORNIA GAMES

US Gold/Epyx

The best Epyx sports simulation yet. And that's saying something.

Version	RRP	ACE price	Order code
Spectrum cass	8.99	**6.95**	AC135SC
Spec+3 disk	12.99	**9.99**	AC135SD
CBM 64 cass	9.99	**7.95**	AC135CC
CBM 64 disk	11.99	**8.95**	AC135CD
Amstrad cass	9.99	**7.95**	AC135AC
Amstrad disk	14.99	**11.95**	AC135AD

XOR

Logotron

Ingenious maze-escape game, packed with mind-bending puzzles. Original and very compelling. ACE Rated 927. *Extra special prices!*

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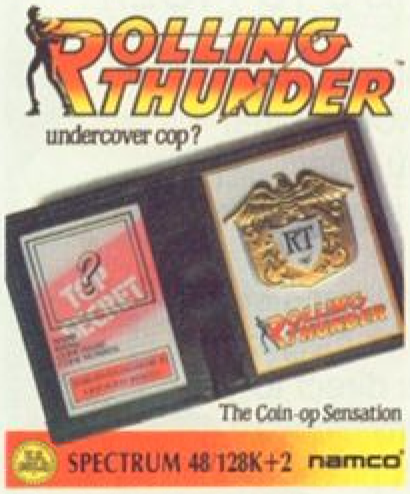
Spectrum cass	7.95	**5.25**	AC142SC
CBM 64 cass	9.95	**6.95**	AC142CC
CBM 64 disk	12.95	**9.95**	AC142CD
Amstrad cass	9.95	**6.95**	AC142AC
Amstrad disk	14.95	**10.95**	AC142AD
BBC cass	9.95	**6.95**	AC142BC
BBC disk	12.95	**9.95**	AC142B

ROLLING THUNDER

US Gold

Impressive conversion of the Namco coin up featuring an undercover cop in platform shoot-em-up action.

Version	RRP	ACE price	Order code
Spectrum cass	8.99	**6.95**	AC146SC
Spec+3 disk	12.99	**9.99**	AC146SD
CBM 64 cass	9.99	**7.95**	AC146CC
CBM 64 disk	11.99	**8.95**	AC146CD
Amstrad cass	9.99	**7.95**	AC146AC
Amstrad disk	14.99	**11.95**	AC146AD
Atari ST	19.99	**15.95**	AC146ST
Amiga	24.99	**19.95**	AC146AM



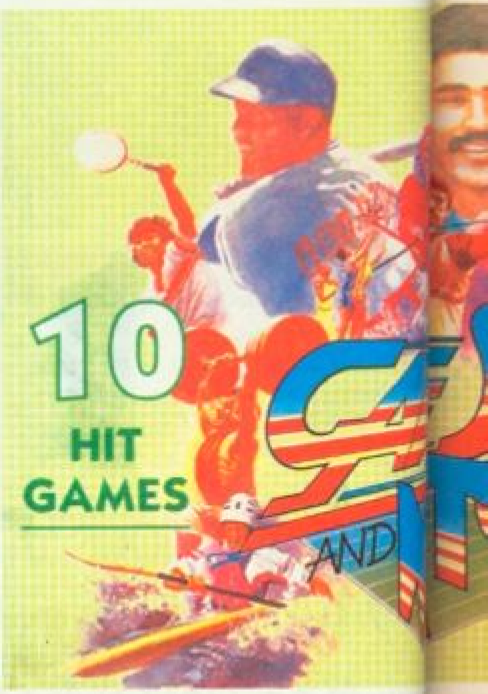
MAGNIFICENT SEVEN

Ocean

An incredible value-for-money compilation which includes Head Over Heels, Arkanoid, Wizball, Short Circuit, Cobra, Frankie Goes to Hollywood, and Yie Ar Kung Fu.

Version	RRP	ACE price	Order code
Spectrum cass	9.95	**7.95**	AC129SC
CBM 64 cass	9.95	**7.95**	AC129CC
CBM 64 disk	14.95	**11.95**	AC129CD
Amstrad cass	9.95	**7.95**	AC129AC
Amstrad disk	14.95	**11.95**	AC129AD

WIZBALL
ocean



GAME SET and MATCH

Ocean

A massive compilation of 10 complete sports games – including Konami's HyperSports, Ping Pong and Tennis, Daley Thompson's Super-Test, World Series Baseball, Pool, Championship Basketball, Barry McGuigan's Boxing, Super Soccer and more. Incredible value!

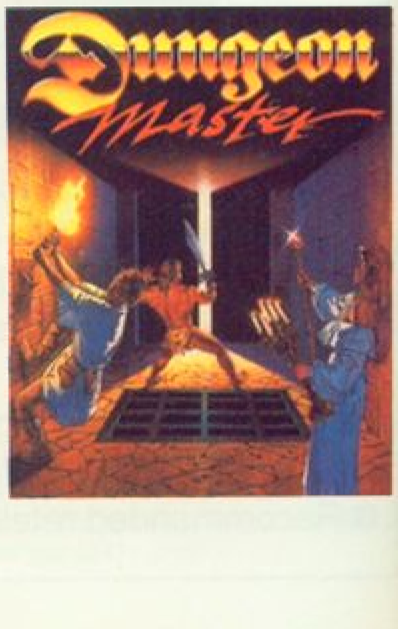
Version	RRP	ACE price	Order code
Spectrum cass	12.95	**9.95**	AC120SC
CBM 64 cass	12.95	**9.95**	AC120CC
CBM 64 disk	17.95	**13.95**	AC120CD
Amstrad cass	12.95	**9.95**	AC120AC
Amstrad disk	17.95	**13.95**	AC120AD

● ATARI ST TITLES

(In addition to those elsewhere)

Don't miss the incredible **OIDS** and **DUNGEON MASTER**, both ACE RATED in the high 900s. **Leaderboard** is the definitive golf simulation, **UMS** an innovative wargame, **Wizball** an addictive, original bounce-em-up, **Slapfight** a combat game.

Version	RRP	ACE price	Order code
Oids	19.99	**15.95**	AC148ST
Dungeon Master	24.99	**19.95**	AC149ST
Slapfight	19.95	**15.95**	AC150ST
Wizball	19.95	**15.95**	AC109ST
California Games	19.99	**15.95**	AC135ST
Leaderboard	24.99	**19.95**	AC151ST
UMS	24.95	**19.95**	AC140ST



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3. All prices include VAT, postage and packing.
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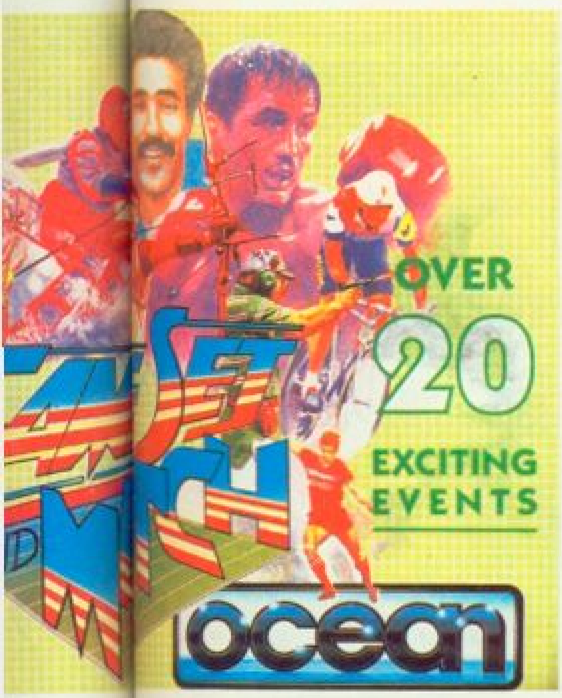


● AMIGA TITLES
(In addition to those elsewhere)

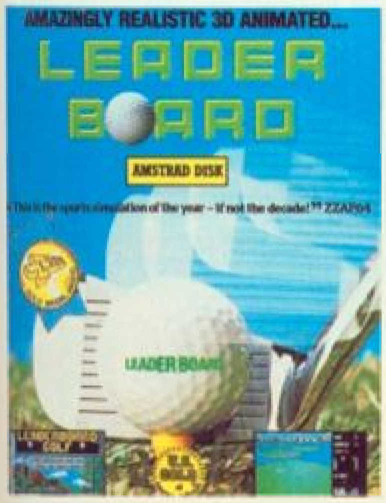
World Games and ***Winter Games*** are the Epyx sports classics, *Hardball* is a great baseball simulation, ***Leaderboard*** the definitive golf simulation, *Jinxter* is an adventure.

Version	RRP	ACE price	Order code
World Games	24.99	**19.95**	AC108AM
Leaderboard	24.99	**19.95**	AC151AM
Hardball	24.99	**19.95**	AC152AM
Jinxter	24.95	**19.95**	AC139AM

● IBM PC TITLES
(In addition to those elsewhere)

These leading games should also run on Amstrad PCs and other compatibles. **Elite** is the definitive space trading and combat game. *Tomahawk* is a sophisticated flight simulator, *Hardball* a great baseball simulation, *World Class Leaderboard* the definitive golf simulation, *Jinxter* is an adventure, *UMS* a wargame, *Tetris* an addictive puzzle

Version	RRP	ACE price	Order code
Elite	24.95	**19.95**	AC105PC
Tomahawk	24.95	**19.95**	AC150PC
California Games	19.99	**15.95**	AC135PC
World Leaderb'd	24.99	**19.95**	AC151PC
Hardball	24.99	**19.95**	AC152PC
Jinxter	24.95	**19.95**	AC139PC
U.M.S.	19.95	**15.95**	AC140PC
Tetris	19.99	**15.95**	AC153PC



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Hack'n'slash and Shoot-em-up

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The Ultimate Warrior
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BARBARIAN

Hit that fire button hard to survive in **Rimrunner**. The latest game from Palace is a manic shoot-em-up for the Atari ST.

Now available for the Amiga and the ST – **Barbarian The Ultimate Warrior**, the classic hack'n'slash game.

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ST versions (Rimrunner, Barbarian) £14.99 plus 80p P&P.
Amiga (Barbarian) £19.99 plus 80p P&P. Access and
Barclaycard holders phone 01-278 0751

PRACTICAL MIDI

Even if you don't know Middle C from the Mediterranean, MIDI can help you expres yourself musically in ways you never thought possible. Part two of our no-nonsense guide to home music-making continues as Keith Ansell looks at the different uses for MIDI and ways in which you can exploit the new technology.

MAKING MUSIC

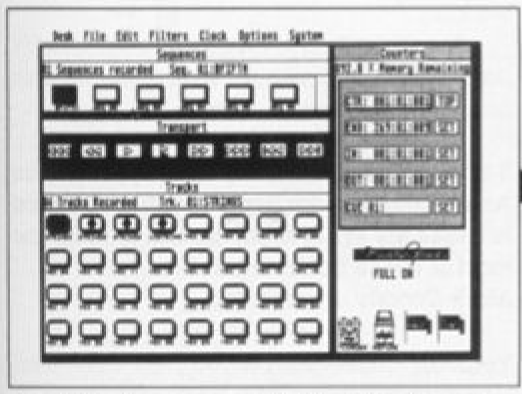
Most people can pick out a one-finger tune on a keyboard, or strum the odd chord on a guitar. Whatever your instrument, MIDI allows you to exploit even the most rudimentary skills to create music for your own and other people's enjoyment. At the simplest level, a keyboard such as the Casio CZ230S, which has 100 varied and usable pre-set sounds and a programmable rhythm accompaniment, used in conjunction with readily available software, will enable you to produce music beyond the scope of your normal playing ability.

Alternatively, one of the increasingly affordable MIDI guitars now on the market (Casio DG20 at £279, or MG500/510 at £549), will allow the guitarist access to all the superb sounds of modern synthesisers. In fact, you don't even have to buy a synth – most manufacturers produce what is called an 'expander' – a synth without all the expensive bits – keyboard, buttons, sliders etc – that uses your computer or other MIDI instrument (MIDI guitar, for example) as the controlling device.

Expanders can represent tremendous bargains. The Roland MT32, for example, has much of the internal circuitry of the £1200+ D50 synth but costs only £450. It gives you an astounding 32 voices to play around with in full stereo – literally an orchestra under computer control.

SAMPLING

Sampling is the conversion of real-world sounds to numbers, and the subsequent manipulation of those numbers, which allows the sounds to be played or sequenced by a MIDI instrument. There are many sampling keyboards and expanders now available, and their potential for creative music-making is enormous. They enable you to take any recordable sound, or dropped dustbin lid, or your kid brother's whining, and play it from a keyboard or sequencer. They work particularly well with short sounds, and so are great for sequenced drum parts, but a good quality sampler will allow you to re-create any instrumental sound, as well as giving wide scope for experimenting with your concerto for scalded cat; they are serious tools as well as being fun.

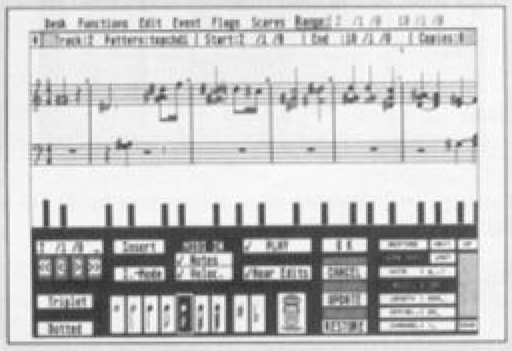


Sonus' *Masterpiece* sequencer – a fully-featured 32 track recorder for less than the price of a good steroe!

COMPOSING/SONG WRITING

Sequencers make excellent song-writing tools, even if you have never composed a tune before. One approach is to start the sequencer recording in real-time and then just relax and doodle away at the keyboard (or MIDI guitar, or even a 'wind controller' that enables wind instrument players to generate MIDI data) until it stops. Then play it back and listen for any sections that seem to have potential; scrap everything else, and continue doodling on a different track while listening to the first. Sometimes this technique produces garbage, sometimes usable ideas, but it is always enjoyable.

Furthermore, with software such as PRO24 for the Atari ST, anything thus recorded can be edited in music notation form and printed out as a score for others to play.



One of Steinberg's *Pro-24* edit screens, with full manuscript possibilities.

SEQUENCING

'Sequencing software' is just jargon for a musical word processor-cum-multi-track recorder, that enables sound data to be manipulated at will. There is a wide range of excellent seqencing software available, and it should form the heart of a MIDI system.

Data can usually be entered in several ways:

- Real-time recording: the sequencer records the notes as you play them on your MIDI instrument. Because it is data that is recorded, not sound, it can be played back through any other MIDI instrument(s) and the sound can be altered during playback in ways that would be impossible by any other means. So you can play a tune on your MIDI guitar, then replay it through your keyboard.
- Step-time recording: Several possiblilites, depending on your sequencer – enter notes one at a time from an instrument, specifying the time value for each note, or create a visual pattern by entering notes on a grid, or enter notes in music notation form (great for creating your own version of anything published as sheet music – just transcribe the dots then orchestrate!)

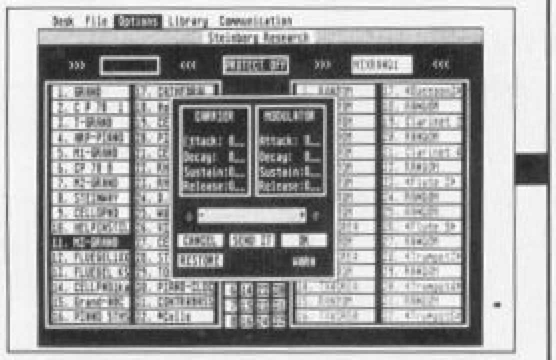
The best thing about sequencers is that they enable you to edit your playing and really get the best out of it – altering the sound until you get it just the way you like it. Without MIDI, the only way to do this would be to spend years investing in expensive equipment and refining your playing techniques.

MULTI-LAYER SOUNDS

MIDI allows you to play or sequence up to 10 different instruments set to different channels: or you could have sixteen instruments playing the same thing on one channel. This might be a little over the top, but 'layering' two or three different sounds can be made rich and powerful by adding to it a horn or trumpet or another synth or expander, especially if one sound is slightly detuned relative to the other. Or widely-contrasting sounds can be mixed to create totally new and individual sound colours.

If you have a keyboard with, say, 100 pre-set sounds, then the addition of a low-cost expander such as a Yamaha TX7 (which has 32 resident voices), will give you 3,200 possible sound combinations, with infinite potential for new combinations by loading new banks of sounds into the TX7. If, instead of the TX7, you had a TX81Z which allows you to trade the number of notes played simultaneously (polyphony) for the number of different sounds played at once, (multi-timbrality), then the number of possible permutations becomes astronomic. With 8-note polyphony you could have 12,800 2-layer sounds, (the TX81Z has 128 voices on board); with 4-note polyphony you could have 128 x 128 x 100 possible 3-layer combinations; and when considering the monophonic possibilities we'll have to skip the maths due to shortage of space for lengthy strings of zeros.

A lot of equipment can be fitted into a small space, and the MIDI standard enables you to keep everything in sync.



Steinberg's *Pro-Creator* allows you to edit sounds on the DX7, TX7, TX816 and TX216 – and arrange them in banks as well.

SOUND EDITING

One of the reasons many of today's high-tech instruments are so affordable is that the buttons used to programme them are made to perform several functions; this keeps the cost down, but makes getting the most from the instruments very difficult, particularly as they usually have only a small liquid crystal display.

Full-screen editing of synthesizer sounds is now possible for many leading instruments, via affordable software that often allows you to do things with the synth that would be impossible without the computer. For example, many editing packages will allow you to take two of the synth's pre-set sounds and 'blend' them together until you end up with a sound somewhere in between. Suddenly, the arcane task of synthesizing becomes more comprehensible and you can build up libraries of sounds on disc, which the software allows you to transfer easily to the synth's memory banks. These discs can then be swapped with other users, or even – if the sounds you program are particularly good – offered for sale.

RECORDING TO TAPE

Sequenced compositions can of course be stored as computer data on disc or cassette; however, it is likely that at some stage you will want to record your work in a more readily playable form as a stereo (sound) cassette. No problem here – many MIDI instruments have an audio out socket that you can use to record directly onto tape.

SO WHAT CAN I DO WITH IT?

It is hard to think of a more satisfying and enjoyable use for a home computer than creating music; but in case your personal satisfaction is not enough, here are some ideas for possible applications:

- Sound effects and incidental music for amateur theatrical performances.
- Education – it is nearly impossible not to learn more about music while using this gear, and like all the best learning experiences, it is hugely satisfying.
- Instrumental backing tapes for pub/club singers.
- Sound tapes for local groups – cub carol concerts, music and movement classes, play groups, etc.
- 'Muzak to Measure' – background music for parties, party-plan selling, local society meetings, etc.
- Practice tapes for singers or instrumentalists, with the part to be practised missing from the mix.
- Soundtracks for home videos. (An SMPTE sync unit may be needed for this one, although you could edit your visuals to match the sound).
- Demo tapes for singers/songwriters.
- Compose songs for down-loading via modem to Micronet's Music City Service.

'I've recently purchased an Atari 520STFM and I'm interested in finding out what it can do as regards music. I don't have any MIDI equipment yet though'...
Jon Whitlock, Suffolk.

The ST is currently the world's favourite music micro for amateur or professional applications. There are several packages which will help you create three-part music on its built-in sound chip (see your local software shop), but because the ST has built-in MIDI sockets, it's most popular for use in conjunction with other MIDI-equipped instruments.

The main applications would be in recording MIDI data to recreate complete musical compositions; editing and storing the sounds of synthesizers; and perhaps sound sampling. Originally it was impossible to do all these at once with one ST, but that situation's slowly changing.

If you want to really test out the St start with an on-board sound manipulator such as The Music Construction kit from E.A. then get a cheap sequencer package such as Michtron SuperConductor (£49, although there are some good sequencers in the Public Domain too), and a MIDI synth such as the Casio CZ-101 (£180 second hand). Those will probably give you the music bug, and after that the sky's the limit...

'I have an Amstrad CPC6128 and Casio MT-210 synth – how would I connect them together? I saw a package called MIDITrack at the Amstrad Show but since it is £69 I decided to wait a bit and look around'...
Daniel Berman, Liverpool.

As far as I know you won't persuade the CPC to play the MT-210 as the latter has no MIDI. You'll have to start by trading it in for a CZ230S or similar MIDI synth; once you've done so, you'll find MIDITrack as good as any other CPC sequencer, and there aren't any very much cheaper ones to consider.

'I have designed and built a MIDI interface for my Amstrad CPC6128 and want to use it to re-program the voices of my Casio CZ230S and program the rhythm section...'
Brian Gillon, Chatham

Congratulations on building your own interface, but it won't allow you to re-program any sounds on the CZ230S other than the last four, 96-99. Any CZ Editor such as those from EMR or DHCP would be suitable provided your interface is fairly standard; memory 99 is usually used as an edit buffer while you're working.

The CZ230S can't channel incoming MIDI data to the drum sounds, so you're stuck with on-board composition. Sorry.

'I own a Yamaha DX-100 MIDI synth and an Atari 520STFM with Super Conductor. I want to make my synth multi-timbral to make the most of the 16 tracks available...'
Mark Conolly, Dumbarton.

You can't make the DX-100 play more than one different sound at a time, but Yamaha's

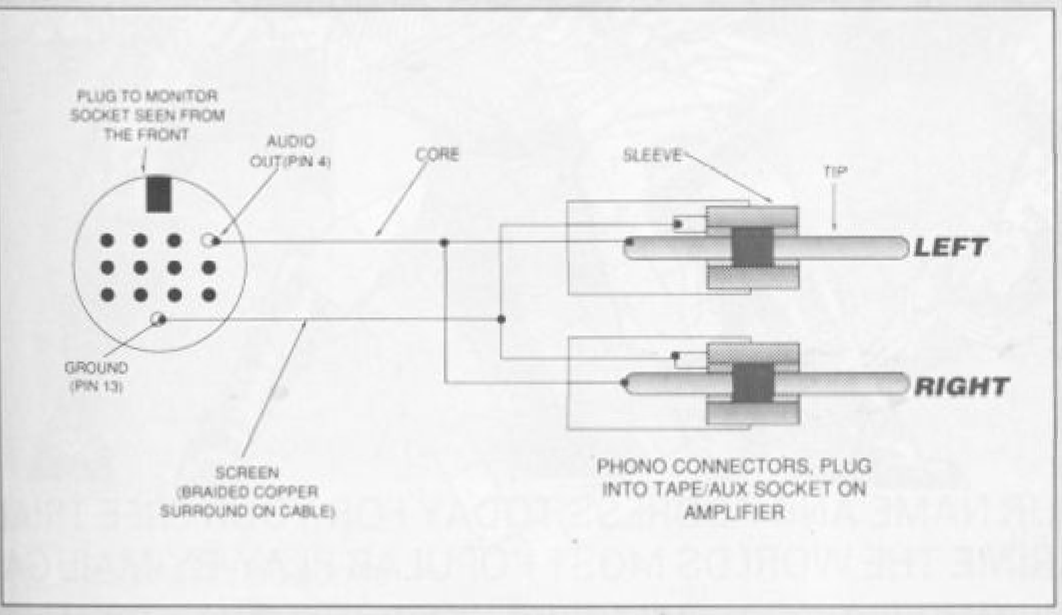
MIDI PANEL OF EXPERTS

The letters we've received range from four-line requests for information on the sum total of all software available for a particular computer, to four-page epics about debugging existing MIDI systems. Your MIDI Agony Aunt is Mark Jenkins.

FB-01 module will do exactly that. It can play eight notes simultaneously and you can assign any number of notes to any of its hundreds of sounds, provided the total is eight. So a mono bass line, three-note string chords, two-note brass, a lead line and a silly effect could all be programmed and controlled from different tracks of Super Conductor. The sound quality of the voices is virtually identical to those of the DX-100; in fact DX-100 and FB-01 sounds are interchangeable. You'll need editing software to create new sounds on the FB-01; this can be obtained from Soundbits and many other companies via any music shop.

Is it possible to connect the Atari 520ST's 'audio out' socket to a hi-fi to improve sound quality? I own a Casio CZ230S, CZ5000 and Yamaha Clavinova and would be grateful if you could recommend some affordable software to use'...
Craig Donald, Ayrshire

Buy a spare monitor plug from your local dealer, carefully wire up the audio and earth pins to a pair of phono plugs as below, and you'll hear your ST's built-in sounds through a hi-fi. As for MIDI keyboards, Super Conductor from Michtron is the best bet – a powerful but straightforward 16-track polyphonic sequencer which will let you create long compositions and hold up to 10 in memory simultaneously. A bargain at £49.96...


PLUG TO MONITOR SOCKET SEEN FROM THE FRONT
AUDIO OUT(PIN 4)
CORE
SLEEVE
TIP
LEFT
RIGHT
GROUND (PIN 13)
SCREEN (BRAIDED COPPER SURROUND ON CABLE)
PHONO CONNECTORS, PLUG INTO TAPE/AUX SOCKET ON AMPLIFIER

Yamaha's new DX11 – multi-timbral possibilities for summer '88.

I've been a very low-tech lead guitarist for many years but now have an Atari 520STFM with Steinberg Pro-24 software, a Cheetah MK5V mother keybord and Roland TR505 drum machine. Can I sync the Atari or 505 directly to one track of my TASCAM Portastudio? Can I use the Atari or 505 directly to one track of my TASCAM Portastudio? Can I use the Atari as a sampler and control the samples from a MIDI guitar like the Casio? I'd like to be able to sample my favourite guitar sounds and sequence them. Where are the Atari's audio input and output ports? How can you record samples with them? Can the new Cheetah DP5 pads be used to trigger the 505? How could I link up two MIDI controllers such as a guitar and a keyboard into the single MIDI input of the Atari?
Geoff Rees, Cheshire.

Phew! We ought to be on conusltancy rates for this one. To take your questions one at a time; the TR505 will sync to tape and will then clock the Atari for playing back MIDI data in synchronisation with music on tape. But if you want to record MIDI data at the same time you'll need a merger – see below.

There are a couple of cheapish ST-based samplers such as Pro Sound Designer which could be played by a MIDI guitar, but none of them will let you simultaneously load up and use Steinberg to sequence their sounds. To do that you need a new system called Lynex at around £1,500. Your best bet is to buy a second-hand Akai S612 sampler (about £300) , stick your fave guitar sounds in there and sequence them from Steinberg.

The Atari's audio in-outs are pins on the monitor socket and aren't used by any of the samplers we mentioned. Cheetah's DP5 pads should play the 505 but still aren't available to check the fact at the time of writing. A Roland Octapad will definitely do the job though.

To use both keyboard ahnd guitar controllers to send MIDI into the ST without re-plugging you'll need a MIDI switcher or patch selector – the Philip Rees model is good value. But since you also need to be able to combine incoming note data with time signals from your tape sync while recording, a MIDI merger would be more useful to you. There aren't many cheap ones available yet, but check with your local music shop to see what they've got in stock...

'I've played electronic keyboards for some time but will soon be buying a Yamaha DX7S – what can I do when it's linked to a ZX Spectrum via a MIDI interface?...'
Steven Strassheim, Tyne & Wear

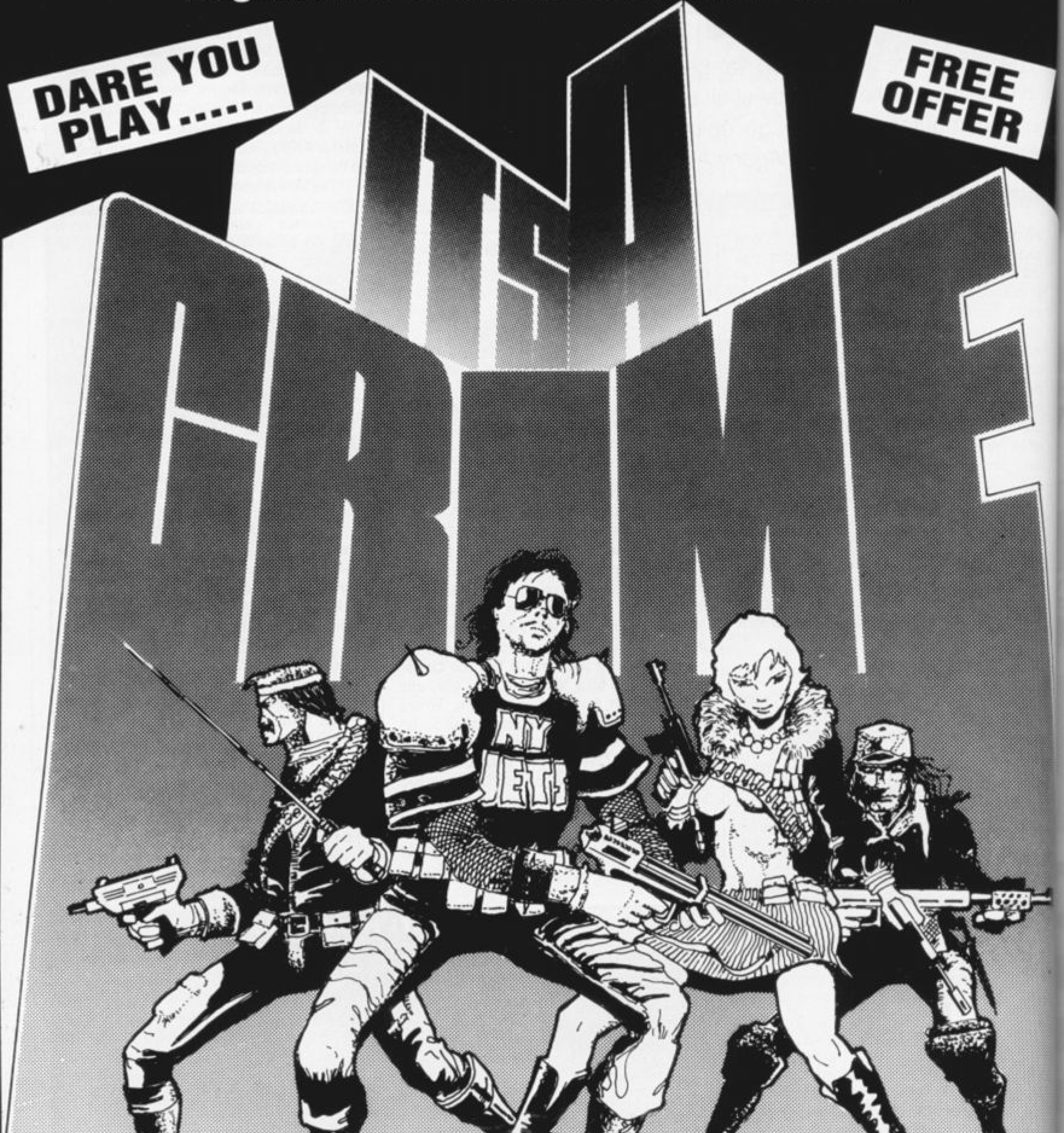
There are plenty of Spectrum interfaces and software packages about – XRI, EMR and others should still be in music stores like Rock City in Newcastle. You can record performances in 'Real Time' or 'Step Time' (one note or chord at a time), play them back, edit sounds and create a sound library using other software, and change from one sound to another in the middle of an automated playback. But you'll only be able to play back one sound at a time on the DX7S; the new DX11, being multi-timbral, is a better bet, but that won't be available (rather cheaper than the DX7S at £699) until the summer.

'Having just bought some MIDI keyboards my funds are having enormous trouble trying to sort out reasonably priced sequencers'... ***John Rashman, Gwent***

Since you mention the Cheetah and XRI packages elsewhere in your letter we assume you're using a Spectrum – you'll understand that there's no point recommending the very wonderful Steinberg Pro-16 if you haven't got a Commodore 64, or Michtron Super Conductor without an ST, for instance. But hardware sequencers are getting cheaper too – Cheetah are just about to launch one as a companion to their drum machine at around £160. Watch this space...

GET INTO CRIME!

In the late 1990's the streets of New York are a jungle. You are the ice cool leader of a gang of drug crazed terrorists. Your main goal is to become the richest, toughest and most notorious gang in the city.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NY JETS

FREE!

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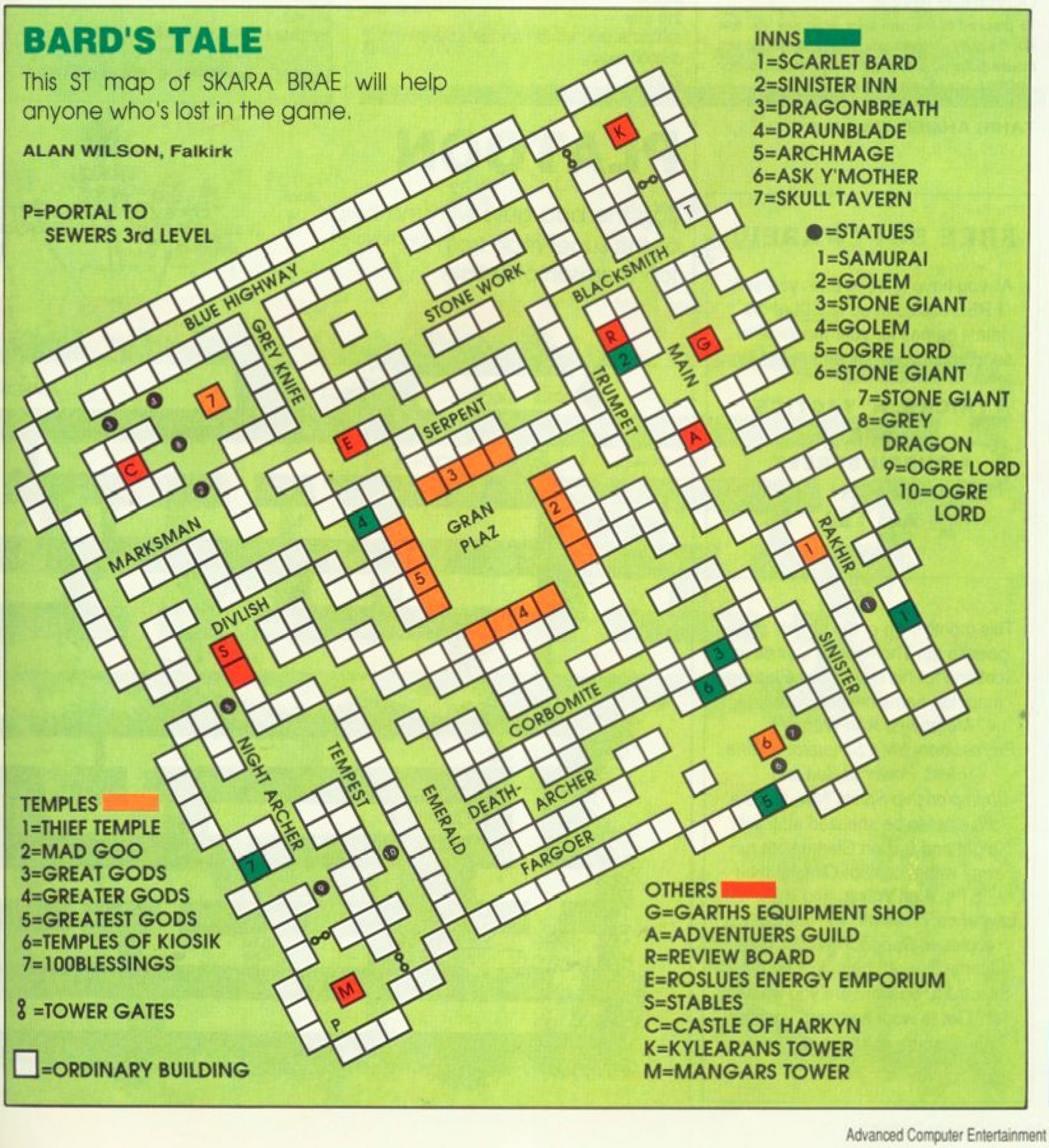
KJC GAMES, PO BOX 11, CLEVELEYS, BLACKPOOL, LANCS FY5 2UL.

TRICKS 'N' TACTICS

In the merry month of May what better than a multitude of maps? Platoon, Terramex, Bard's Tale, you name 'em – we've got 'em, plus much more besides.


BLUE HIGHWAY
GREY KNIFE
STONE WORK
BLACKSMITH
TRUMPET
MAIN
SERPENT
GRAN PLAZ
MARKSMAN
DIVLISH
RAKHIR
SINISTER
CORBOMITE
NIGHT ARCHER
TEMPEST
EMERALD
DEATH-ARCHER
FARGOER
K
T
R
G
A
E
C
S
M
P

BARD'S TALE

This ST map of SKARA BRAE will help anyone who's lost in the game.

ALAN WILSON, Falkirk

P=PORTAL TO SEWERS 3rd LEVEL

INNS 🟩
1=SCARLET BARD
2=SINISTER INN
3=DRAGONBREATH
4=DRAUNBLADE
5=ARCHMAGE
6=ASK Y'MOTHER
7=SKULL TAVERN

●=STATUES
1=SAMURAI
2=GOLEM
3=STONE GIANT
4=GOLEM
5=OGRE LORD
6=STONE GIANT
7=STONE GIANT
8=GREY DRAGON
9=OGRE LORD
10=OGRE LORD

TEMPLES 🟧
1=THIEF TEMPLE
2=MAD GOO
3=GREAT GODS
4=GREATER GODS
5=GREATEST GODS
6=TEMPLES OF KIOSIK
7=100BLESSINGS

8 =TOWER GATES

☐=ORDINARY BUILDING

OTHERS 🟥
G=GARTHS EQUIPMENT SHOP
A=ADVENTUERS GUILD
R=REVIEW BOARD
E=ROSLUES ENERGY EMPORIUM
S=STABLES
C=CASTLE OF HARKYN
K=KYLEARANS TOWER
M=MANGARS TOWER

SCREAMING WINGS

This cheat should help any ST owners who are having problems with this game.

Simply press and hold the left mouse button while you're playing the game and wiggle the mouse until a red box appears in the top left. Now all you have to worry about are the large missiles.

JEROME HOPEFULLY, Houghton Conquest.

INSANITY FIGHT

A handy Amiga cheat to advance levels.

To proceed to the next level whenever you feel like it simply involves you holding down the two mouse buttons, pressing the joystick fire button and the L key all at once. Easy eh?

TAHIR AHMED, Chesham

FREE SOFTWARE!!!

All you have to do to earn yourself FREE copies of up to SIX of the latest games for your machine is send you maps, tips and pokes to:

TRICKS 'N' TACTICS
ACE
4 QUEEN STREET
BATH
BA1 1EJ

This month's 'tip of the month' prize goes to Ian Thomson of Dairsie in Scotland for his marvelous *Platoon* map. Ian earns himself copies of *Morpheus*, *Ikari Warriors*, *Professional BMX Simulator*, *Strike Fleet*, *Power at Sea* and *Championship Sprint*. Now that's a prize not to be sneezed at! Paul Knight and Darren Clarke both run away with a copy of *Oids* for their ST's. Alan Wilson and Mark Lawrence, however, win themselves copies of *Dungeon Master* and Martin Duckett gets *ATF* for his Spectrum. So what are you waiting for? Get to work and earn yourself some software. ◆

BLACK LAMP

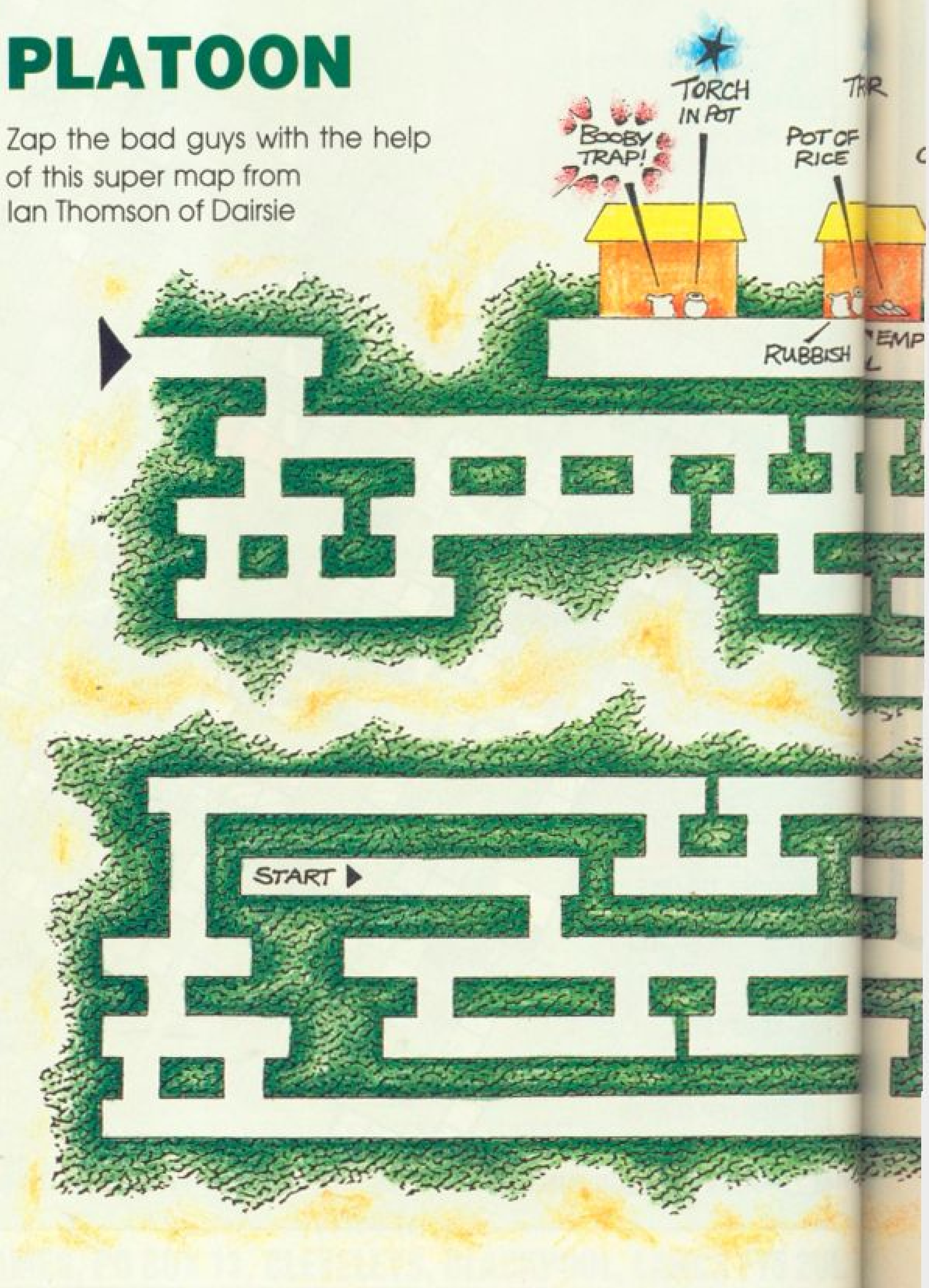
For infinite energy for this ST arcade adventure, simply type in the listing, save it, insert the *Black Lamp* disk and RUN. The game should then load as normal.

```
80 def seg=0
90 for n=&h6a000 to &h6a065 step 2
100 read a: poke n,a
110 next n
120 cheat=&h6a000
130 call cheat
200 data
&h42a7,&h7e20,&h3f07,&h4278,&h8260,&h7001,
&h3f00
210 data
&h42a7,&h3f00,&h4267,&h42a7,&h4df9,&h0003,
&h0000,&h2f0e
220 data
&h3f3c,&h0008,&h4e4e,&h3d7c,&h6058,&h0156,
&h41fa,&h0010
230 data
&h43f9,&h0003,&h01b0,&h32d8,&h51cf,&hfffc,&h
4ed6,&h7000
240 data
&h31c0,&h08d4,&h21c0,&h08dc,&h31c0,&h5944,
&h21c0,&h594c
250 data
&h203c,&h4e71,&h21c0,&h6d8c,&h31fc,&h4e73,
&h1aa2
260 data &h31c0,&h122e,&h4ed0
```

MARK LAWRENCE, Basildon

PLATOON

Zap the bad guys with the help of this super map from Ian Thomson of Dairsie



JET BIKE SIMULATOR

This Code Masters Plus game now has a poke for Spectrum owners that will allow you to qualify for the next race no matter how terribly you ride.

```
10 PRINT AT 10,0;"START TAPE"
20 LOAD ""CODE 23296
25 POKE 23372,104
30 POKE 23373,91
40 FOR F=23400 TO 23407
45 READ A: POKE F,A
50 NEXT F
60 DATA 62,201,50,20,106
70 DATA 195,198,92
100 RANDOMIZE USR 23296
```

MARTIN DUCKETT, Ilford.

BACKLASH

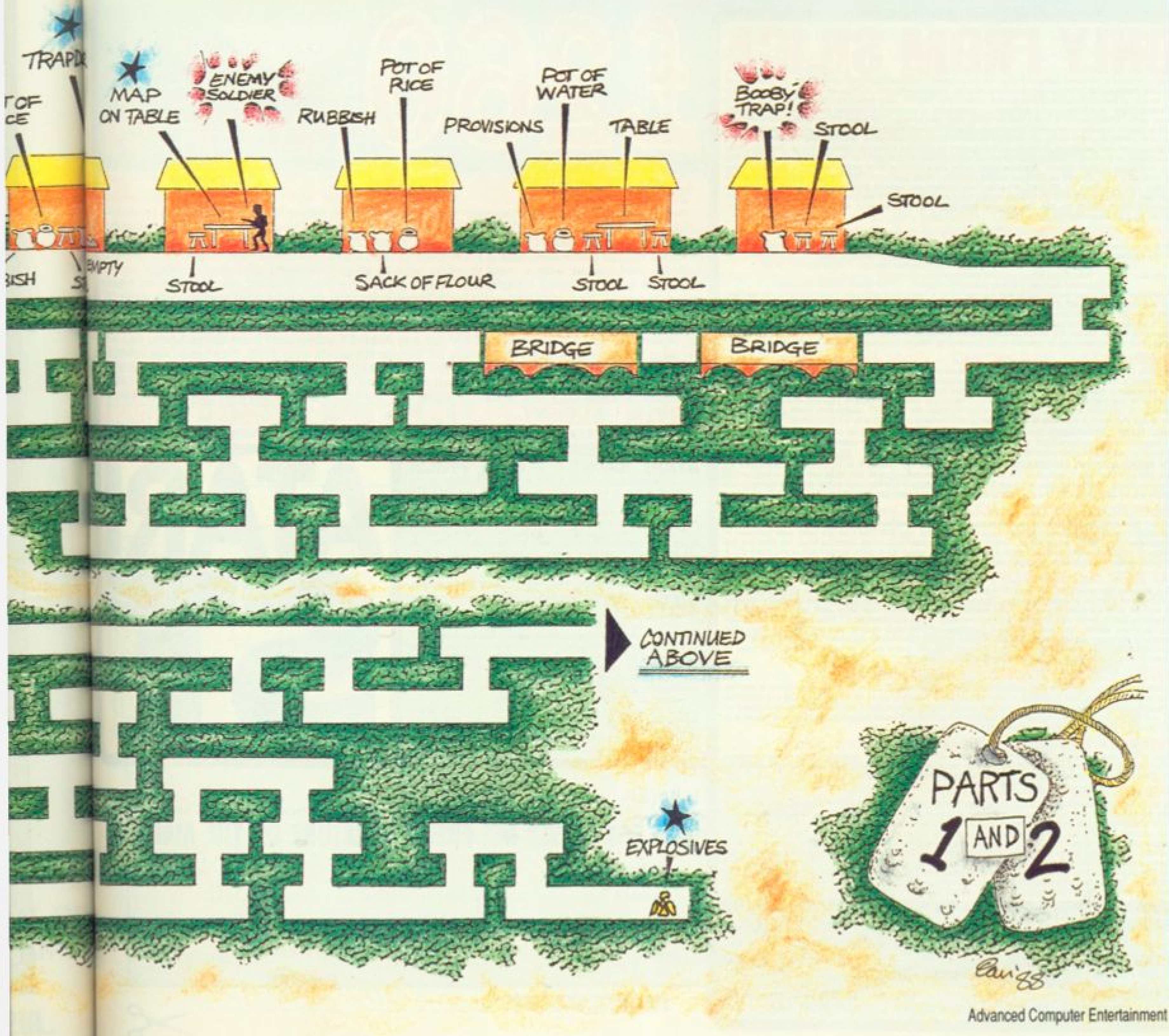
If the missiles etc are causing you to come to grief more often than you'd like on your ST, then try this poke.

Type in and save the program, then insert *Backlash* disk and RUN. The program should load and run as usual but you will be graced with infinite lives.

BACKLASH
ATARI ST
by Paul Woakes

```
80 def seg=0
90 for n=&h6a000 to &h6a045 step 2
100 read a: poke n,a
110 next n
120 cheat=&h6a000
130 call cheat
200 data
&h2f3c,&h0007,&h8000,&h3f3c,&h0020,&h4e41,
&h4df9,&h0003
210 data
&h000,&h42a7,&h3f3c,&h0001,&h2f0e,&h2f3c,&h
0004,&h0002
220 data
&h4e4d,&h41fa,&h0008,&h2d48,&h0084,&h4ed6,
&h41fa,&h000e
230 data
&h43f9,&h0002,&h7dae,&h2288,&h4ee9,&h016c,
&h4239,&h0000
240 data &ha3e3,&h4ef8,&h7000
```

MARK LAWRENCE, Basildon


TRAPD
T OF
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MAP
ON TABLE
ENEMY
SOLDIER
RUBBISH
POT OF
RICE
PROVISIONS
POT OF
WATER
TABLE
BOOBY
TRAP!
STOOL
STOOL
SH
EMPTY
STOOL
SACK OF FLOUR
STOOL
STOOL
BRIDGE
BRIDGE
CONTINUED
ABOVE
EXPLOSIVES
PARTS
1 AND 2
Cau '88

NEW LOW PRICE ST!

ATARI
520ST
ATARI ST
U.K.
Language Disk

ST PRICE INCREASE

Due to a worldwide shortage of memory chips, prices of many computers have gone up. From April 1988, the Atari ST range is also likely to be affected. For details of any price increase, please return the coupon below for our latest literature.

£260 +VAT=£299

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Finally, there's a personal computer that not only solves problems like other computers, but also solves the one problem that other computers have created. Affordability. Silica Shop are pleased to present the ST range of personal/business computers from Atari. The ST was designed utilizing the most recent breakthroughs in semiconductor technology, producing a personal computer that performs tasks with fewer parts. Which means it costs less to make. And less to buy. The latest ST computers now include built in power supplies and built in disk drives. The TOS operating system and GEM window environment are now on ROM chips which are already installed in the ST keyboard. This enables automatic instant booting when you switch on. Silica Shop are pleased to offer the complete Atari ST range. Our mail order department is situated in Sidcup and we have 3 retail outlets at Sidcup, Lion House (Tottenham Court Rd) and Selfridges (Oxford Street). We have eight years experience of Atari products, longer than any other UK company, and are well established as the UK's No.1 Atari specialist. With a group turnover of over £9 million and in excess of 80 staff, we offer you unbeatable service and support. We provide several facilities which you will find invaluable during your Atari computing life and most of these facilities are available **ONLY FROM SILICA**. We suggest that you read through what we have to offer, before you decide where to purchase your Atari ST.

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When you purchase any Atari ST keyboard, you will not only receive the best value for money computer on the market, but you will also receive the following from Atari Corporation as part of the package:

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If you buy your ST from Silica Shop, you will also receive:

** NEOchrome Sampler - colour graphics program * 1st Word - Word Processor*

In addition, we at Silica would like to see you get off to a flying start with your new computer, so we have put together a special **ST STARTER KIT** worth over £100, which we are giving away **FREE OF CHARGE** with every ST computer purchased at our normal retail prices. This kit is available **ONLY FROM SILICA** and is aimed at providing users with a valuable introduction to the world of computing. We are continually upgrading the ST Starter Kit, which contains public domain and other licensed software, as well as books, magazines and accessories all relevant to ST computing. Return the coupon below for full details.

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At Silica Shop, we have a dedicated service department of seven full time Atari trained technical staff. This team is totally dedicated to servicing Atari computer products. Their accumulated knowledge, skill and experience makes them second to none in their field. You can be sure that any work carried out by them is of the highest standard. A standard of servicing which we believe you will find **ONLY FROM SILICA**. In addition to providing full servicing facilities for Atari ST computers (both in and out of warranty), our team is also able to offer memory and modulator upgrades to ST computers.

1Mb RAM UPGRADE: Our upgrade on the standard Atari 520ST-M or 520ST-FM keyboard will increase the memory from 512K to a massive 1024K. It has a full 1 year warranty and is available from Silica at an additional retail price of only £86.96 (+VAT = £100).

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We aim to keep stocks of all Atari related products and our warehouse carries a stock of over £½ million. We import many software titles direct from the USA and you will find that we have new releases in advance of many of our competitors. Unlike dealers who may only stock selected titles, we have the full range. In addition, we carry a complete line of all books which have been written about the Atari ST. A range as wide as ours is something you will find is available **ONLY FROM SILICA**.

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Rest assured that when you buy your ST from Silica Shop, you will be fully supported. Our free mailings give news of releases and developments. This will help to keep you up to date with new software releases as well as what's happening in the Atari market. And in addition, our sales staff are at the end of a telephone line to service all of your Atari requirements. If you purchase an ST from Silica and would like any technical advice, we have a full time technical support team to help you get the best from your computer. Because we have both the staff and the systems specifically dedicated to providing after sales service on Atari ST computers, we are confident that our users enjoy an exceptionally high level of support. This can be received **ONLY FROM SILICA**.

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At Silica Shop, we recognise that serious users require an in-depth information service, which is why we mail free newsletters and price lists to our ST owners. These are up to 48 pages long and are crammed with technical details as well as special offers and product descriptions. If you have already purchased an ST and would like to have your name added to our mailing list, please complete the coupon & return it to us. This information service is available **ONLY FROM SILICA**.

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ATARI 1040ST-F - NEW PRICE

We are pleased to announce a new reduced price point on the 1040ST-F which is now available for only £499 (inc VAT). The 1040 is a powerful computer with 1Mb of RAM and also includes a built-in 1Mb double sided 3½" disk drive. The 1040 has been designed for use on business and professional applications most of which require a high resolution monochrome or colour monitor. It does not therefore have an RF modulator for use with a domestic TV set. Modulators can be fitted for £49 (inc VAT).

1040ST-F Keyboard Without Monitor .... ***£499** (inc VAT)*
1040ST-F Keyboard + High Res SM125 Mono Monitor .... ***£599** (inc VAT)*

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MEGA ST's NOW IN STOCK

For the user who requires even more RAM than the 520 or 1040 ST's offer, the new MEGA ST computers are now available. There are two MEGA ST's, one with 2Mb of RAM and the other with a massive 4Mb. Both new computers are fully compatible with existing ST's and run currently available ST software. The MEGA ST's are styled as an expandable Central Processing Unit with open architecture and a detachable keyboard. They are supplied with GEM, a free mouse controller and all extras as with the 520 or 1040. Prices are as follows:

MEGA ST 2Mb Keyboard + CPU .... ***£899** (inc VAT)*
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Mr/Mrs/Ms: .... **Initials:** .... **Surname:** ....

Address: ....

....

....

.... **Postcode:** ....

Do you already own a computer
If so, which one do you own? ....

DRILLER

If the tips from Incentive's very own Ian Andrews in ACE Issue 5 weren't enough for you Spectrum owners, then this poke for infinite drilling power and shields will prove invaluable. Simply type in the program, RUN it and load the tape as normal.

```
5 CLEAR 32767
10 LET T=0: LET W=0
15 FOR F=65000 TO 65029
20 READ A: POKE F,A
25 LET T=T+W*A
30 NEXT F
35 IF T<>7698950 THEN PRINT "ERROR!!":
STOP
40 PRINT "START TAPE"
45 LOAD ""CODE 65088
50 POKE 65108,194
60 RANDOMIZE USR 65000
70 DATA 205,64,254,33,249,253
80 DATA 17,100,255,1,13,0,237
90 DATA 176,195,46,255,175,50
100 DATA 118,188,50,17,193,50
110 DATA 126,191,195,164,151
```

DAVID MELLISH, Bromley

ENDURO RACER

A nice little cheat for ST owners here.

When you first begin to play *Enduro Racer*, after the countdown type the word CHEAT in on the keyboard. Having typed that in, pressing one of the following keys will result in a specific effect.

- pressing T gives you an extra 10 seconds to complete the race.
- pressing S advances you one checkpoint.
- pressing F gives you turbo speed (210 kmh)

DARREN CLARKE,
South Normanton

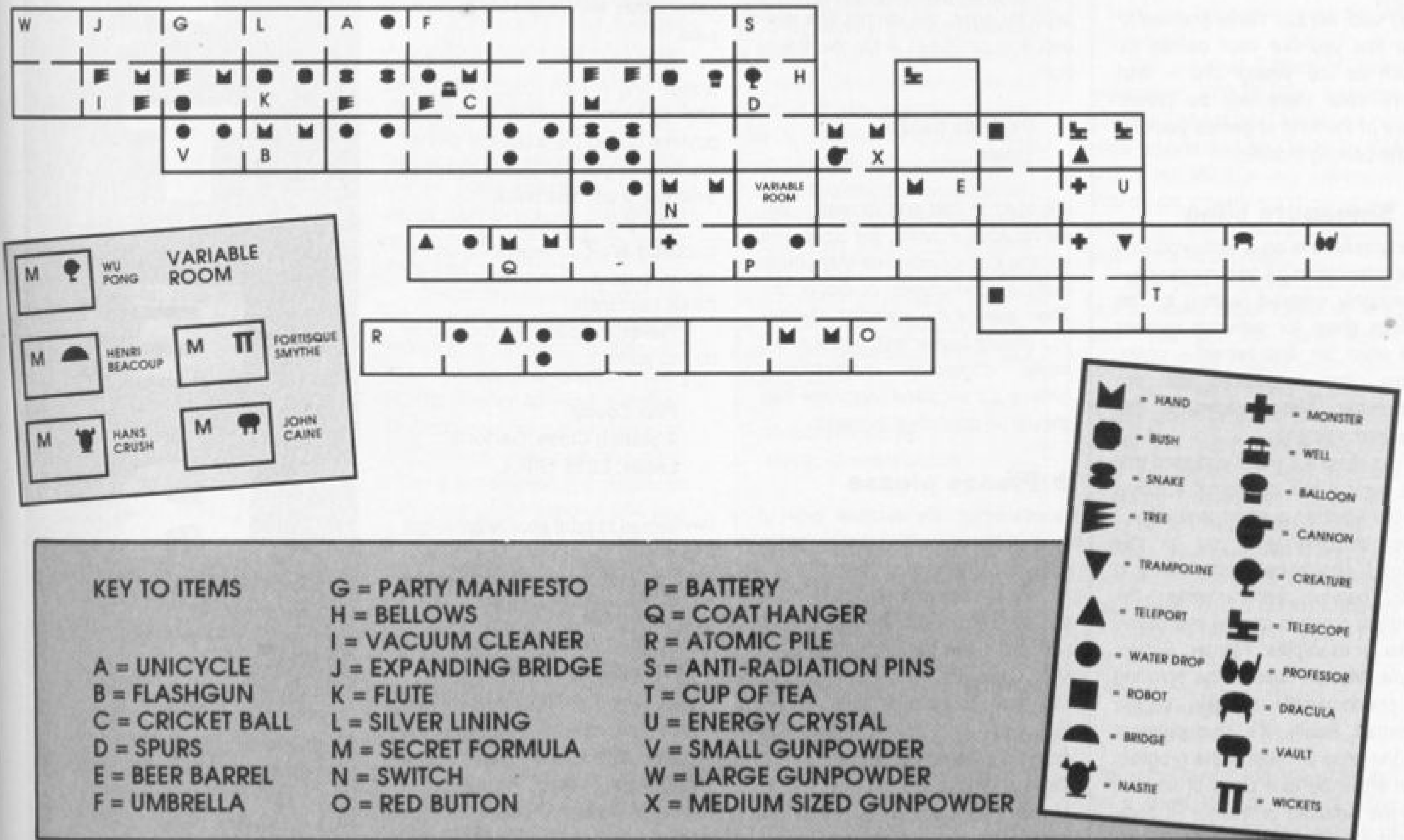
TERRAMEX

Not only do we bring you a wonderful map of the game, but a complete solution as well (use at your discretion)

GET VACUUM CLEANER, R (right), R, GET FLUTE, USE VACUUM CLEANER, L (left), L, U (up), LAND ON LEFT CLOUD, USE FLUTE, L, GET LARGE BARREL, D (down), R, USE VACCUM CLEANER, U, LAND ON RIGHT CLOUD, GET ACME BRIDGE, R, GET MANIFESTO, R, GET SILVER LINING, R, GET UNICYCLE, R, GET UMBRELLA, R, D, L, GET CRICKET BALL, DOWN WELL, (IF WU PONG GO L, L, GET FLASH GUN, R, R) R, USE BRIDGE, R, USE FLUTE, R, R, JUMP ON SPRING, GET BELLOWS AND SPURS, JUMP NEXT TO MONSTER, USE FLUTE, DOWN ROPE, L, L, USE FLUTE, L, USE BRIDGE, L, U, R, R, R, USE BELLOWS, GET IN BALLOON, U, LAND ON CLIFF TOP, R, GET PINS, USE UMBRELLA, D, D, R, GET MEDIUM SIZED BARREL, USE LARGE BARREL, GET IN CANNON, USE UMBRELLA , D, (IF KRUSHE GO R, GET BEER BARREL, L, L, USE BEER, WALK INTO MAN),(IF WU PONG USE FLASH, L), (IF SMYTH USE CRICKET BALL, L),(IF CAINE USE SPURS, L),(IF BEAUCOUP USE UNICYCLE, L), GET FORMULA, R, R, GET BEER (IF NOT GOT ALREADY) R, R, GET CRYSTAL, L, D, L, L, L, GET BATTERY, L, JUMP ON TRAMPOLINE, GET LEVER, L, USE UMBRELLA, D, L, GET COAT HANGER, L, USE CRYSTAL, PUT CRYSTAL IN YELLOW BOX, USE TRANSPORTER, L, GET ATOMIC PILE, USE PINS, R, R, USE LEVER, PUT LEVER IN SOCKET AT TOP RIGHT OF SCREEN, R, WAIT, R, R, R, GET BUTTON, L, L, JUMP AT LEVER, L, WAIT, L, L, USE TRANSPORTER, L, D, D, D, R, R, UP LADDER, GET TEA, DOWN LADDER, L, L, UP LADDER, USE SILVER LINING, STAND ON ANVIL, R, U, R, USE CROSS, R, USE FORMULA...

...Give the Prof the items as he asks for them and that's it. A flipper now appears that flips the asteroid away from the Earth.

PAUL KNIGHT, Cranley.



KEY TO ITEMS

A = UNICYCLE
B = FLASHGUN
C = CRICKET BALL
D = SPURS
E = BEER BARREL
F = UMBRELLA
G = PARTY MANIFESTO
H = BELLOWS
I = VACUUM CLEANER
J = EXPANDING BRIDGE
K = FLUTE
L = SILVER LINING
M = SECRET FORMULA
N = SWITCH
O = RED BUTTON
P = BATTERY
Q = COAT HANGER
R = ATOMIC PILE
S = ANTI-RADIATION PINS
T = CUP OF TEA
U = ENERGY CRYSTAL
V = SMALL GUNPOWDER
W = LARGE GUNPOWDER
X = MEDIUM SIZED GUNPOWDER

ACE LETTERS

Another insult-packed issue of letters – most of the nastiness stemming from your views on the touchy subject of piracy. We always want to hear original thinking on this subject; but if you're going to insult someone let's just try and keep it relatively clean, eh?

Elsewhere, there's stirring news of Mums playing games, and a long letter full of wisdom from north the border.

Whatever you want to say, just get it down on paper and send it to ACE Letters, 4 Queen Street, Bath, BA1 1EJ. And don't forget to specify which computer you own; you never know – yours just might be one of our Prize Letters.

● Mum's the word

I thought I would write in to confirm Logotron's statement about more mature computer players and maybe other readers out there will confirm their statement.

I think *Sentinel* is still the best 3D game. I have nearly 7000 code numbers, on *XOR* I have six screens finished and in *Driller* I have found 13 locations so far.

I am a mum of 48 years young and spend most of my time on my Commodore 128 as my family are now grown up and I find a computer is far more enjoyable than knitting or sewing or any of the other conventional hobbies that are popular with my age group.

Barbara Hudley
Newport

Well said, ma'am. We're gratified to see that you like your games as much as the young 'uns – and we're sure there will be plenty more of the kind of games you like in the coming months.

● Singapore sling

Congratulations on a well-produced and information packed magazine. I thoroughly enjoyed reading it. The ratings given for software reviews are often fair and honest – unlike some other magazines that are somewhat biased towards the Amstrad machine.

In issue 4 it was mentioned that the vertical and horizontal scrolling on the Amstrad is rough and jerky. I must disagree with you on this point. It should be pointed out that with careful programming the scrolling problem can be overcome. Take for examples: *Trantor, Supercycle, Mission Jupiter*, the scrolling is phenomenally smooth on the Amstrad. Really, it's all dependent on the programmers – the program can either be in a class of its own on the Amstrad or inferior in comparison to other 8-bit formats.

Keep up the good work. I have faith that ACE will outsell and outlast the other magazines on the market.

David Wong
Singapore

What precisely do you mean by 'often' fair and honest? They're ***always*** *fair and honest. We take your point about the Amstrad scrolling; the games you mentioned are all excellent in that respect. But you didn't bother to mention the millions of games that don't come anywhere near that standard....*

● Load of old Cobol

Could you please help me find a copy of COBOL for the Spectrum 48K. I have been trying to buy a copy for ages, but cannot find anyone who produces it for the Spectrum.

Riccardo Nardini
Troon

We tried to find one as well – but we couldn't. Frankly, the Speccy is not the kind of machine that you're likely to find copies of Cobol for. Then there's the point of whether you should bother with Cobol at all; many computer professionals believe it's an awful language that should be abolished forthwith.

● Please please

Guess what, it's another one of those letters that fill out your letters page with pleas.

As a dedicated Atari ST user, and I know there are several thousand more out there, I wish to join a User Club. The thing is, the closest club to me is 10 miles away. This is okay when you have a car, but as I can't afford one, I cannot make it to their meetings.

As the Leeds area is lacking a User Club, several friends and I have decided to try and put one together.

We have, at present, around 12 people definitely interested but we shall need a lot more to make it a viable proposition.

One thing must be pointed out now. This venture will not be for those who intend purely to rip-off software. It is for those who are dedicated to learning how to use their machine to the fullest. We hope to have guest programmers from development houses along to explain the ins and outs of programming and selling software of commercial quality. If it is also possible, we will offer a P/D service. As the ST is an excellent music machine (ie MIDI), musicians who use the machine are also welcome. I use my machine for music as well as games and writing these letters. Other ideas will be greatly appreciated.

Anybody who is interested, please ring me on (0532) 871329, after 6pm, any weekday evening or daytime during the weekend and let me know. If you don't have a phone, write to the address below.

We will organise a meeting (probably at a pub depending on the age of people interested) and take things from there.

Please support this, it can only do you good.

Paul Cosby
4 Station Close, Garforth
Leeds, LS25 1PT

We're glad to print your letter to get you going. If you want to advertise later on, then why not make use of the Pink Pages small ads?

● Amiga queries

I have owned my Amiga and Monitor for around two/three months since doing so have spent around £6/£700 on software, the majority of which is American import.

A few questions:-

1) Can we register our warranty anywhere in the UK (Sierra/Infocom)?

2) Anywhere the 'help' books are available?

Also, I'm thinking of splashing out on a colour printer – which one?

Matthew Green
Watford

You should be able to register any Infocom games with Activision, who distribute that software in the UK. Hint books aren't widely available in this country; your best bet is to read The Pilgrim or to consult the people offering help on advetnures in our Pink Pages. A decent colour printer would be the Star LC10 Colour, which weighs in at around £300.

● Give it a rest

I own an ST. No I haven't got TOS troubles, but that's not a joking matter. I think that S Wright and his 'ST bias?' letter in issue four, is bias. I've looked over many magazines, since I read this letter, especially ACE. In the reviews for ST games there's always a bit in there, sometimes rivalling the two computers. But it still gets the Amiga on the act.

Anyway, my friend owns an Amiga but we don't argue about which has the best graphics. Now the ST can produce 4096 colours on the screen, at the same time, this rules our Wright's boast about the Amiga, but it still has the greater processing power in its blitter. Again the ST has a built in MIDI for great music.

I am trying to keep this a non-bias letter unlike Wrights' quote 'But if you want something really special get an Amiga'.

I am really fed up of seeing ST bias, or anti Amiga letters. Why can't people give computer mags a rest? Let's face it, they do try to be fair. Keep up the good work ACE.

S Clark
New Malden

A little friendly rivalry doesn't do any harm does it? In fact, if everybody was perfectly happy, we wouldn't have much to write about, would we?

● Extremely confused

I am getting extremely confused, please help me. I own an Atari ST FM and I buy several magazines to get information on which software to buy.

When I purchase ACE, I often see a review of a game that you thought was very good and I might decide to buy it. I get ??**<<&%** and it gives the same game a low mark and it puts me off.

It happens with other magazine as well. I don't know what software to buy any more. I am sure other people are getting the same problem.

James Mellor
Bedford

Dear Confused,
The answer is simple; ACE is right and all other magazines are wrong. Keep taking the medicine.

● Very rude indeed

I am a new Atari ST owner and was hoping to do some programming. But alas when it arrived there was no information on programming. I did get a booklet on advanced ST basic but that was no good for me because I don't know how to write the simplest ST basic programme anyway. Perhaps you could tell me if there are any books or the like on this subject.

The price of games is really expensive: £20-25, for just one game is just not on. I know you can shop around and buy them for £15 or £16 but still it is very expensive. You do get a really good game generally, but the software companies must get a lot of profit.

Now start to grovel. Last month you reviewed *Black Lamp* by Firebird. You put the game down because of its 'highly impractical' controls. I bought the game last month and I am enjoying it very much. The 'highly impractical' controls are excellent, even with the keyboard. I have never found anything which was inaccessible so perhaps you were not trying hard enough. I think *Black Lamp* should have got at least 915, not a miserly 813. Shame on you! I hope I have not been too rude!

Ben Morris
Monmouth

Yes, you have been too rude, but we're used to that kind of thing here. We stand by our review of Black Lamp; it definitey wasn't a

Words of wisdom

LETTER OF THE MONTH

I believe that I am older than the majority of your readers and as such have perhaps had a little more time to develop an overview of the pattern of computer sales and perhaps my reflections may be of help to others.

In my youth I became one of the earliest owners of Dragon 32 (an early steam-powered computer) because I realised that the pundits were right, and that this machine, with its 6809 chip, was to be the standard by which others were judged. How right I was. Everything else seems to have been better than it.

As the years rolled by, it came time for me to stop merely playing with computers and to use them for the purpose for which God intended. Serious playing. Obviously, the simple Dragon would not suffice for this strenuous role and so I cast my aged eye around for a meritorious machine to supplant it, and I felt that in the Amstrad 6128 I had found such a machine, and that this was one which would not quickly become obsolete!

It is now obsolete. Nonetheless my trusty Arnold will not be replaced in the near future. The aged eyes are now slightly jaundiced, and for their own protection many of your readers would be well advised to develop the same outlook, at least for a while. The reasons being as follows.

Given the premise that the 16-bit games machine market is in relative infancy, buyers should be cautious about holding their breath and jumping at the first or the cheapest knick-knack that comes their way. I cite as an example of this video recorders. Originally there were three main types i.e. V2000, Beta and VHS. The 'first two are respectively , dead and dying. Now only VHS remains. If you think that this does not apply to computers, remind yourself of the Oric Atmos, Tatung Einstein, Acorn Atom and Electron, Dragon 32, Aquarius etc etc. The main premise of whether or not to buy a new machine is not how good it is, but how long it will last? Only time will tell. There were many, perhaps better, computers on the market before the IBM PC. But they aren't there now.

Secondly, I would suggest that the current boom in 16-bit games software is probably a transient phenomenon. The example that I cite for this is Amstrad software. This sold like hot cakes when the CPC's were introduced, but tailed off to a lower level and now runs very much in the wake of C64 and Spectrum sales, reflecting the relative numbers of the machines. I firmly believe that 16-bit games are doing the same. Therefore, either 16-bit buyers are wealthier or they are buying software for their machines because as yet they have very little.

Thirdly, any prospective buyer should consider whether or not he or she could afford to upgrade (if possible) or completely replace any machine if and when the manufacturers replace it. Here any one of a number of cases could be cited, but perhaps one need only look so far as the bewildering plethora of ST Variants already on the market to wonder how long any one of them will last.

In conclusion, I reckon that the 8-bit isn't dead yet. I know that you've heard everyone say that before, but the format is, after all is said and done, both versatile and, more importantly, popular. The sheer volume of these computers in the country speaks for itself. There is really a massive amount of software presently on the market. 8-bit owners are not prepared to pay full price for programmes any more because we have all bought a 'quality' program at some time or another and have been most dreadfully disappointed by an unplayable game that soon palled. There is no reason to suppose that 16-bit owners will not do the same in due course. If ST, Amiga and the prospective Amstrad owners are supplied with impeccable software I will be proved wrong, but frankly, I doubt it.

Robert McIntrye
Udny, Aberdeenshire

Och, ye've had such terrible bad luck that I cannot find it in myself to withold a prize from ye – if only because of the forbearance with which you turn the other cheek to the blows of fortune. As for hedging your bets on 16-bit, we're convinced that those machines and their software are here to stay. But we don't believe that 8-bit is dead; there's plenty of life in those old dogs yet.

900 game, although it should perhaps have scored a few more points. As to beginners' books on ST Basic, Atari are releasing a new version of their Basic Source Book, which should be available as you read this.

● Librarian

Please could you answer my questions. How would I go about starting my own software hire library? I understand that I would have to get written permission from software companies, but how do I do it? Also if I then get permission, do I have to pay full price for a game and then give them a percentage of what I make? Please answer my questions as it seems like a good idea and I want to know if it can work. In other words, will I have to pay out a fortune to get it off the ground?

Also, do you know of anyone bringing out a 16-bit magazine? The CBM64 and Speccy and the Amstrad have all got magazines, all on games, for themselves so why not the ST and Amiga? There can't be any excuse for no software surely, 'cause all the software houses are backing the 16-bit computers, so come on people, give us a games magazine.

Please print this letter as I've written to loads of mags and never had one printed. My last question, why is ACE £1.50 when others are much cheaper? Even so, I am sure loads of others think your mag is great.

Jason Allen
Oxton, Birkenhead

Our advice to you is – don't do it. The whole business of whether you can legally hire out software is very tricky. And you have to admit that a lot of borrowers will be most likely to copy the stuff while it's out on loan. As for a 16-bit games magazine, what on earth do you think you're reading? OK, so we give in-depth coverage to 8-bit stuff as well, but ACE is second to none in its coverage of the 16-bit entertainment scene. Why does ACE cost £1.50? Because it's prined on glossier, better-quality paper; because it's full of beautiful colour screen shots; because every month we offer superb prizes and special promotions. Let's face it – the chance of winning an Atari ST or loads of software is pretty attractive.

Diary of a satisfied customer

PRIZE LETTER

January 9th 1988. Got ACE today. The February issue's great. The competition is fab and so is the graphics chapter. Just look at the artwork. The 16-bit machine graphics are so skillful. Oh, how I wish I could have an Atari 520 STFM, my Commodore 64 is well out of date. Idea!! Maybe if I enter the Arcade machine competition, I might win. I could then sell it and buy an Atari. Fantastic, why didn't I think of this before. Hello, thought you would catch me out. I'm not that dumb, I've already read the whole issue. Tried to fool me by putting the *Xenon* picture in the *Sidewinder* paragraph. This ACE competition is so easy. Just fill in the entry form, stick a stamp on it and pop it in the post. I'm bound to win! I sent the form off straight away. Soon I would have an Atari 520STFM.

After looking at the ACE issue again, I noticed adverts, second idea!! I could sell my Commodore 64 by advertising in ACE and then with the money I get and the money I've saved I could afford an Atari. Look! it's free to advertise. I'd better send my advert off quickly. This idea is hopeless. I've advertised my micro in other mags, and no ones bought it. Oh well, it's worth a try; after all, it's free.

Feb 6th 1988, 10am. Got ACE March issue today. Quick turn to the pink pages. Search the columns for my advert. Ah! There it is. How professional it looks. Mind you, look at other Commodores advertised, they are much cheaper! I doubt if I'll sell mine now. This is so frustrating. For a whole year I've craved for an Atari ST. Commodore's are now like ZX81's. What am I to do? All my friends have Ataris and I am like an ugly duckling among swans. Every time I see a 16 bit micro I feel like committing murder.

Feb 6th 1988 6pm. Ring, ring, ring goes the phone. I dash downstairs as fast as my legs can carry me. 'Hello', I say 'Hello' says the replier, 'I'm phoning about the Commodore 64 for sale'. Great! I gave the phone to my dad to do all the technical stuff. Yes they are buying. Great, fantastic, superb, what can I say? Thanks ACE. Later that day I received two other phone calls about my Commodore.

Now I can afford my long-awaited Atari and I owe it all to ACE. Now ACE is charging £2.50 and I definitely recommend it. It pays to advertise with ACE. My problem is solved. I no longer pace up and down my room but play all night and day on my Atari.

J Williams
Stifford Clays

After this long and enthiusiastic tale of enterprise rewarded I guess we've just got to award you a software prize for you to play on that ol' ST. Remember folks– it pays to use the Pink Pages.

● Small ad anxiety

My associates and I are attempting to establish an Atari ST user group. We would like to place an advertisement in the new 'pink pages' of your magazine. However, there is an apparent limit of 30 words for user groups, but I have noticed that some of the advertisements have exceeded the limit. We feel that we require more than 30 words in our advertisement. We should like to know if this is possible and if so, what is the extra charge?

A J Smales
Market Weighton

It costs £2.50 to place a 30 word small ad; Di – the small ads supremo (or suprema?) – says that if it's just a few words over there probably won't be any problem. If it gets much bigger, just pay twice £2.50.

● Caning for Commodore

Can you say whether there is or isn't any truth in the rumours of Amstrad releasing an Amiga type home micro? I think that if it was released it would mean a serious caning is in store for Commodore, maybe even bankruptcy! And where would this leave CPC owners, with Alan Sugar's business policies they may end up "on the rocks".

Do the manufacturers have to be so hard on each other and indeed on us the micro owners.

Are 8-bit micros dying? This is a question on many micro owners minds. Are they or aren't they? I know new 16-bit machines wipe them all over the road with great graphics and sound, but will the 8-bits be losing releases to others (16 bits).

George Laird
Loughborough

See our news pages for more on the Amstrad 16-bit rumour. 8-bit micros might not be as healthy as they once were; but I wouldn't say they were dying.

● Is heavy metal a killer?

I just want a word on censorship. Many people today think that crime is on the increase and it is due to heavy metal etc. This is utter nonsense, as the crime rate has stayed the same for centuries. It is only that we have more news about it that we think there's more.

We then go about and blame it on films and computer games that depict sex and violence. Computer games as a rule make a player more aggressive, but a player must be aggressive in the first place to play them. Games with a lower resolution of 320 x 256 or less, would not be censored. If they are; only those that express extreme violence should be censored such as *Death Wish III* and then it should be censored to over twelves. Games with a higher resolution should only be censored if the graphics are good and show mutilation or nakedness and then be given a 15 certificate. Any games that don't come under this category but still show violence should be censored to over twelves.

Companies haven't bothered with it so far, but as 16 bit computers get more used, censorship should be imposed due to realism. Most authorities forget though, that computer games are for enjoyment and not for filling our bloodthirsty desires. Thanks for letting me speak my mind.

Patrick Degeham
Newly, Co Down

Utter nonsense isn't the exclusive preserve of those who think crime is on the increase.

● Where are the consoles?

First of all I would like to commend you on an excellent magazine, full of software reviews news and views which all add up to an excellent magazine.

As you are called ACE (Advanced Computer Entertainment) I felt I had to write to you to ask you where the games consoles are in your magazine. Surely, since these are dedicated games machines they should get some coverage of the software available for them. I own a Sega System and buying games for it is rather difficult as I have no chance of seeing them beforehand, so maybe you could review a game or two a month (as I only buy one game a month or so) so that people like myself can get the best software for our games system and give the worst ones a miss (as £15 – £20 is a lot to pay for a game that will only appeal for a few days).

I do think that this system does deserve some coverage even if the number of games titles is relatively small at the moment so how about it?

Jon Healy
Exmouth

Jon – we've never neglected the consoles, but there hasn't been much fresh stuff around to review. We did have Sega reviews in our last issue. To make sure you don't miss console software reviews in future, we're pointing them out more clearly on the Screen Test intro page.

● Nosedive

First I would like to say, that I have been a devoted ACE fan, and your mag is so good I don't read anything else: Good mag, brill mag, sorry crawling again.

For the attention of ACE reader's and ST users; I have just bought that simulator that all mags rate to be good – including ACE – *Flight Simulator 2*, by Sublogic 'Great, can't wait to get home and get up with the birds in the clouds'' But horror, what shock, what dismay, what c****.

Yes, for just £49.95 you to can fly in boring scenes with poor graphics and read a 132 paged handbook, that you need a degree in aviation, or map reading, to understand how to get from one place to another.

Yes I know it's not a game, but for £49.95 you would at least expect to get your 49.95 pounds' worth.

All the airports look the same apart from the odd mountain, that when you fly over it, it looks as flat as a pancake on shrove Tuesday. Graphics wise I gave *Flight Simulator 2* 4 out of 10.

The sound is not too hot as well – try crashing – just a "DING" sort of sound, where are the other planes or trees, or buildings. I did not know that this earth of ours is flat. I thought it was round, but just try flight sim – everything is flat, the whole boring thing is flat.

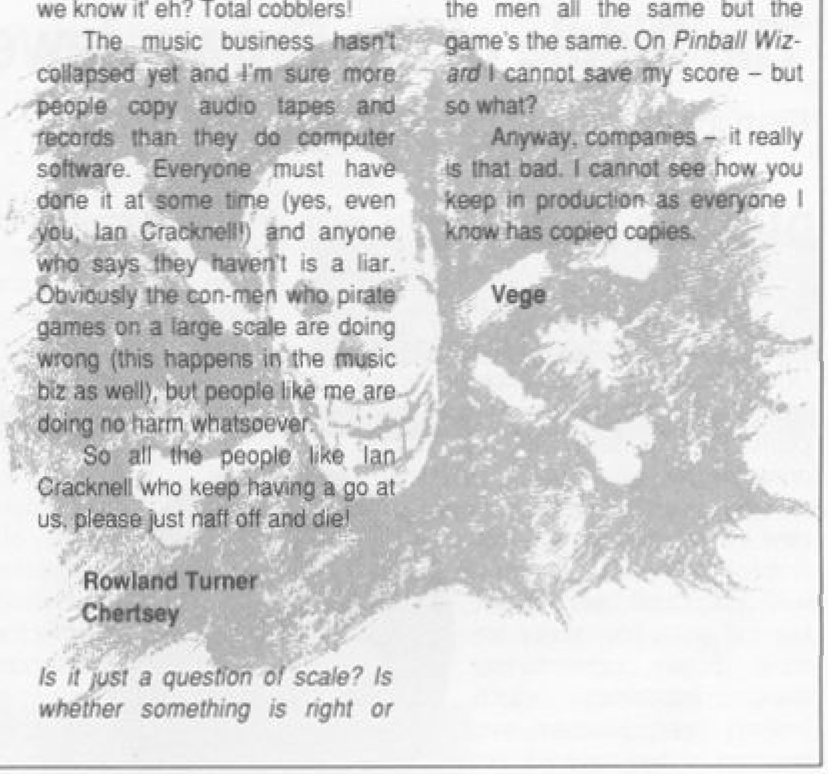
Just try the thrilling World War 1 Ace. Set your sights on the spaghetti flying enemy, shoot your guns – no sound? No explosions when you drop the bombs that you can't even see, yes all in all I must be in a silent movie.

Now as you can see I am very disappointed and so I should be, but should I? Am I expecting too much from my ST or is it that software programmers are taking the mickey mouse? And I say again for £49.95. DO YOU THINK I AM MOANING??

K.J. Brady
London

Yes, we think you're moaning. Perhaps your problem is that you're just not the flight simulator kind of person. Many of these people exist, and they take no pleasure in the detailed mechanics of flight, and keep away from software which simualtes it. It's just a pity that you bought the most expensive one around.

Piracy again



● Piratical rubbish

In reply to the 'Reluctant Pirate' I feel I must point out that he is talking rubbish.

There is absolutely no excuse for Piracy; greed can be your only motive. There are probably plenty of pirates who complain about the amount of unemployment. Don't they realise that their actions, on any scale, are just as likely to make the situation as bad, if not worse than any government?

Remember when the 'Speccy' was 'the' computer, there were hundreds of software houses. Where are they now? Obviously not all of them were put out of business by pirates. Some were due to bad management or even just bad games. But piracy will have been a major contribution to many companies' demise.

I know that three or four unemployed on top of three million does not seem like much, but tell that to your – and I use the word advisedly – 'victims'. I know that I didn't enjoy my spell of unemployment.

I, too, have spent a large sum of money on my computer, a 520ST, and I am also a manic games player but I will not touch pirated software, even when offered at extremely low prices.

As an example, I have been waiting for *Out Run* and *Gunship* since before Christmas, but like thousands of others I will be patient, and hopefully as with other delayed releases the game will more than make up for any amount of the time spent travelling to my local retailer.

My last word on this subject is: There is no excuse for piracy.

David Paton
Glasgow

● Piratical cobblers

After reading the letter 'Is 'Doley' a thief?' by Ian Cracknell in your March issue, I finally snapped. Sorry Ian, but it's you who's the plonker, not A Doley. I'm sick and tired of being branded a thief just because I copy games for friends, and of people who condemn others like me in general. So A Doley is 'spoiling the software industry as we know it' eh? Total cobblers!

The music business hasn't collapsed yet and I'm sure more people copy audio tapes and records than they do computer software. Everyone must have done it at some time (yes, even you, Ian Cracknell!) and anyone who says they haven't is a liar. Obviously the con-men who pirate games on a large scale are doing wrong (this happens in the music biz as well), but people like me are doing no harm whatsoever.

So all the people like Ian Cracknell who keep having a go at us, please just naff off and die!

Rowland Turner
Chertsey

Is it just a question of scale? Is whether something is right or wrong merely a question of how much you do it?

● Mad bomber

While reading last month's letter page I was suprised to find the letter form the reluctant pirate. It said just what I wanted to. I read it through agreeing with more or less everything. Then I read your reply, I couldn't believe what you were saying so I planned to bomb the place. Then I thought I couldn't agree as you are a mag and everything would fall on you like a ton of bricks so I wrote a letter instead. Here is another tip for the companies – do not release reproduction copies. My *Garrison* has the men all the same but the game's the same. On *Pinball Wizard* I cannot save my score – but so what?

Anyway, companies – it really is that bad. I cannot see how you keep in production as everyone I know has copied copies.

Vege

PILGRIM

What a month! the Cowled Crusader casts his eye over Infocom's latest offering, checks out a new release from the company that will soon be bringing you *Dungeons and Dragons*, and checks out a new competitor to *The Bard's Tale*. All that PLUS Shades Diary, Pat's Patch, and No Problem! Go for it, wanderers...

SHERLOCK HOLMES

The Riddle of the Crown Jewels

Return to tradition with INFOCOM

DURING the last few months, we've seen many different game-styles coming out of the Infocom stable. We've also seen more products than ever before in such a short space of time. One of these has been excellent - *Beyond Zork* - but the others have all had their weak points and suffered in the ratings accordingly.

Plundered Hearts - great new genre, but far too easy; *Nord'n'Bert* - highly original and occasionally very funny, but just a bit too quirky for most British adventurers; finally, Infocomics, which haven't been released over here yet (if they ever will be) - a very disappointing move away from adventuring into a pseudo-comic-book budget market.

Now we get *Sherlock*, and bless my heart if there isn't anything new about it at all (except on-line hints, which we've already had in *Nord'n'Bert*). It's a reasonable text-only adventure, not one of Infocom's best by any means but still very challenging in parts. But is that enough? The problem is that the previous releases have raised expectations, either (recently) of innovation or (in the older, classic Infocom games) of monstrously high quality. *Sherlock* doesn't seem to have either.

The plot is straight-forward enough. As Doctor Watson, you must locate the missing Crown Jewels, stolen from the Tower of London. The game begins at 5.00am on a Saturday morning and you must retrieve the booty by Monday. It's not easy.

RELEASE BOX		
C64/128	£19.99dk	OUT NOW
IBM PC	£24.99dk	OUT NOW
ATARI ST	£24.99dk	IMMINENT
AMIGA	£24.99dk	IMMINENT

First, your friend Sherlock is of very little help. He simply follows you around throughout most of the game, mumbling to himself. This is tough, because some of the puzzles could do with the personal attention of the great detective. You'll find yourself reviving dying flower-girls - give them the wrong pill and the game's up; retrieving various isolated baubles from difficult spots - one of the jewels, for example, is stuck to the clapper of Big Ben; and getting past officious guardians of Madame Tussauds, the Tower of London, and so on.

The game takes place on a relatively small map featuring locations in 19th century London, though there are one or two anomalies. My colleague the White Wizard, who's been around a bit longer than I have, assures me that even in the 19th century you could walk eastwards along Euston Road. Furthermore, there's a definite emphasis on well-known tourist landmarks that marks the program as the product of an American software house for an American public.

What's missing from the program, however, is any really inventive interaction with computer-controlled characters. You can try kissing Mrs Hudson, with vaguely amusing results, but there's nothing along the lines of, say, the intelligent droids in *Stationfall* or the party guests in *Suspect*. This, combined with a map that will appeal more to the Yanks than to those of us who've seen most of it before, weakens the game and fails to compensate for the strong and undeniably intriguing puzzles.

So, not exactly elementary, my dear Pilgs, but nor is this one of Infocom's more advanced productions. There's no doubt that, with other companies coming onto the market with some very strong products, some reappraisal of Infocom's position as numero uno is required. Their recent games have pointed out some new directions, but *Sherlock* doesn't really point the way forward in any of them. Judgement, therefore, is temporarily suspended...

SYSTEM	**91**	**ENCOUNTERS**	**88**
CHALLENGE	**88**	**LANDSCAPE**	**86**

ACE RATING 899

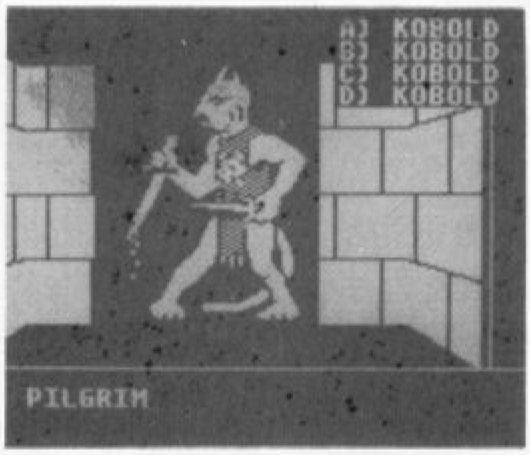
MIGHT AND MAGIC

Rapid-fire role-play from ACTIVISION

ACTIVISION UK are really knocking out the products these days. They seem to have an inexhaustible supply of games from Infocom (who they own) and Sierra-on-Line and now they've added New World Computing, introduced with this *Bard's Tale* look-alike fantasy role-playing game.

At first sight, M'n'M seems distinctly inferior to *Bard's Tale*, and especially to *Bard's Tale 2* which we reviewed last month. The graphics are noticeably poorer, as is the atmosphere generated by the text (what there is) and the documentation. The scenario is very similar – the scrolling graphics window shows the view in four directions as you make your way through five different towns plus assorted dungeons, forests, and other monster-infested areas.

RELEASE BOX		
C64/128	£24.99dk	OUT NOW
IBM PC	£24.99dk	OUT NOW
	No other verions planned	



MIGHT AND MAGIC **Not as pretty as Bard's Tale, but it has better combat routines.**

Where M'n'M scores, however, is in it's user interface and in the combat system. Although the game features fewer character types than *Bard's Tale*, it enables you to get more out of them by including rapidly executable options during combat that permit changing the 'order of battle' and concentrating your attack on particular members of the ungodly.

In some ways, however, gameplay becomes rather too easy at first, since you can often retreat (which snaps you back to your start location) or rest (and completely recover) without penalty. Later in the game these options become slightly less accessible, but are still there to get you out of tight spots. There are a large number of spells to cast and novice players will find that they can cause quite a bit of damage even at Level 1, unlike the *Bard's Tale* which doesn't give you much sorcerous strength until you've risen to the next level of experience. However the more advanced spells are less imaginative than their *Bard's Tale* equivalent, being simply (for the most part) more powerful versions of their lower-level equivalents.

Good points, therefore, are rapid gameplay as the system is friendlier; improved combat system that actually promotes tactical thinking; and a number of 'games within games' as other characters set you different tasks to accomplish.

On the minus side, the presentation on-screen isn't as good as *Bard's Tale* and a magic user's existence at the higher levels is not nearly so interesting. The verdict must be that those who like flashy graphics and unusual spells will prefer *Bard's Tale*, those who want an easier life at the lower levels and better combat routines should try out M'n'M.

SYSTEM	88	ENCOUNTERS	78
CHALLENGE	87	LANDSCAPE	79
ACE RATING 825			

QUESTRON II

Ultima-style gameplay from SSI

THIS new release is significant because it comes from the same company that, later this year, are to bring us *Advanced Dungeons and Dragons*. Looking at *Questron II* may give us an idea of their potential.

The program is pretty run-of-the-mill in design. It's similar to the *Ultima* series in concept, with an overhead view of a landscape across which you manoeuvre a small figure with the joystick. Every so often monsters appear with whom you do battle in return for treasure and at the expense of your limited supply of hit-points.

Also on the map are towns, cathedrals, tombs and castles, as well as the usual dungeons, displayed in head-on perspective as in *Bard's Tale*, *Dungeon Master* and others.

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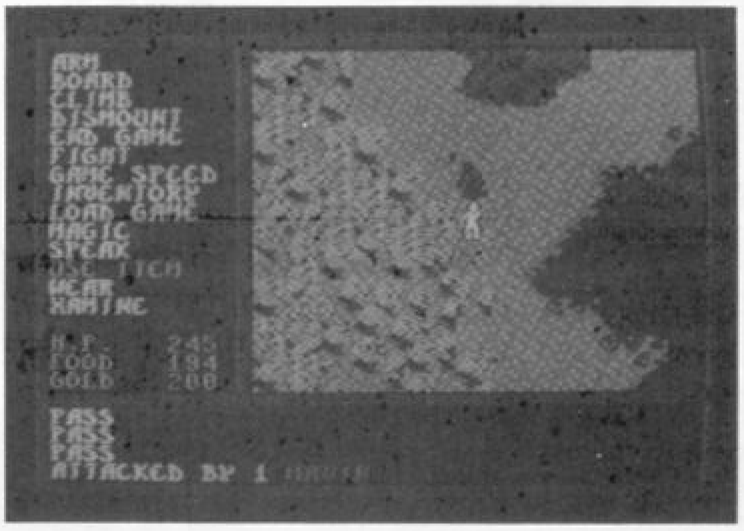

QUESTRON II - **the mystical world of Landor, viewed from above.**

Placing your figure on top of the representative symbols for these features and then selecting an 'enter' option changes the display accordingly, with towns and cathedrals also shown from overhead. Your ultimate objective is to defeat the creators of the Evil Book of Magic (which, ironically, helps you in your quest) and get rich in the process.

There have been quite a few programs like this on the market – Wintersoft's *Ring of Darkness* was one of the first and despite its crude graphics it's slightly sobering to realise that *Questron II* doesn't offer an awful lot more. You only get four different spells and a single persona to move around (no partying in this game) and combat routines are a simple cut and thrust affair with each side taking a swipe at the other and either hitting or missing.

The obvious comparison must be with the *Ultima* games, which offer more detailed maps, more magic, and in general far more features throughout the game. However, in the dungeon sequences, *Questron II* does have some superb graphics (together with on- screen mapping) and is also very easy to play throughout, relying totally on rapid joystick selection and implementation of the various options. If you want to try out this game genre without tackling anything too complex, then the game is recommended, otherwise stick with its meatier competitors.

SYSTEM	79	ENCOUNTERS	80
CHALLENGE	85	LANDSCAPE	75
ACE RATING 819			

SHADES DIARY

No time for pacifism this month as Sappho the Witch tells how Britain's largest multi-user on-line game copes with the introduction of a new feature – the Fighting Skill attribute. Contact her on MBX 019998149.

When someone mentions gossip they refer to who is 'bonking' who, when, and where; but it seems that everyone has done everything to everyone else already...

Actually, what has really happened is that there has been yet another change to the game. So everyone is too busy arguing about that to worry about those intimate moments in the Bridal Suite (aka the BS, where folks play mummies and daddies).

This latest alteration to *Shades* revolves around changes to the fight system and the introduction of Fight Skill (FS). All players start with a base of 1000 skill points, and this is then altered by their ability to kill other players. The point of FS is that as your skill increases so does your ability to fight better, or so the theory goes.

The resultant debate is very long-winded with one off-shoot of the debate coming to the fore. Immortality is seen as the acme of achievement – ie being able to collect 2,000 points and then keep them from a gaggle of frustrated longswordsmen waiting to impale you on their weapon (Oi! I said I wasn't going to talk about the Bridal Suite!). So, should wholesale mass murder be allowed?

Some argue that they should have the choice of being peaceful, non-killing characters that can't be attacked, whilst others say that it is all part of the game, as essential as collecting T (treasure) and solving puzzles.

It would be nice to report that this debate had been settled once and for all. We could then inform Her Majesty's Government that the problems of mankind were solved, and all live happily ever after. Unfortunately, this conflict between the supporters of action and the supporters of pacificism is unlikely to be settled in a hurry.

My own view is that being peaceful doesn't mean that you can't, or shouldn't learn to defend yourself. Surely part of the whole adventure is about being able to cope with all contingencies, violent ones included? Sappho would never attack, but that never stopped her grabbing an assailant's weapon and returning it, pointy edge first.

My favourite weapon? The cabbage...

> You are being battered by a cabbage leaf. You like it so much that you beg for more, completely failing to see the rusty longsword being inserted into the lower portion of your alimentary canal. You'll never be able to walk properly again.

Then again, if that doesn't appeal, you could always scream pitifully and show a clean pair of heels...

ATTENTION PLEASE

If you've ever wondered what it's like taking part in an on-line game with dozens of other human players, then wonder no more. Next month, ACE will bring you a special feature on on-line MUGs in which Sappho will give you everything you need to know about this exciting area of computer entertainment.

The games, the players, the quests, and all the details you need to log on will all be there. Don't miss it!

NO PROBLEM!

All glory, praise, and adoration is due to these valiant adventurers who have risked life, limb, and a trip to the nearest postbox to deliver these timely tips for other players. This month, the Pilgrim confers honorable Pilgrim status upon Raymond Ternent, Ian Gay, A.J.O'Donovan, R. Marshall.

To send in your own bid for immortality, jot your clues clearly on a postcard and post it to The Pilgrim, 4 Queen Street, Bath, BA1 1EJ.

Bored of the Rings

Riders – play hide and don't seek.

Borrowed Time

Spy a meeting in doctor's to stop a fight at the car park.

Bally Hoo

A fancy dress party the meeting is not – but it could get you quite a lot.

Lions that cause trouble need a whipping, but don't be a stool...

Starcross

Red and yellow could save your hide – in the repair room they will slide.

Stationfall

Plato is a problem concerning a droid, so maybe you could use Floyd.

Mirror, mirror on the wall, is there any platinum to be found at all?

What was once hot can help with the cold problem of explosives.

Planetfall

Microbes fall for hot lasers.

Let Floyd do the dirty work in the biochambers.

Wishbringer

A stone in the head is better than a hole in the head.

Karyssia – Queen of Diamonds

The password to part 2 is ORLA

Say Ornithia Ostrania to stop hawk attacking

Examine tree, open door, and go tree. Then down and then north. Say to Hermit, 'Hello'.

Drop skullcharm on to pentacle and it will turn into a pair of doubleswords.

Kentilla

Need to enter the castle? Reunite Timara with Dragon Zelda and help will be at hand.

Kobyashi Naru

To get the solance, activate it and pull, to get out of the pit, climb on the wall.

Zzzz...

To catch the bus, raise sign, then raise hand

To get past the crocodile step on it.

Rigel's Revenge

Lost in the desert? Retrace your steps.

To get a uniform from the bungalow, throw some rubble at the security light.

Redhawk

Give the vase to the curator.

The wellies will save you from a shock.

Techno can be defeated with the magnet.

Beyond Zork

Sell Mischief and Fireworks – both useless.

Sell valuable objects – tusk, crown, doubloon, jewel etc

Buy a rabbit foot and rub it to earn luck.

To get the minx, erase snow tracks (to earn compassion) and wait for the hunter to pass by.

Kiss the Unicorn's horn for luck and then levitate unicorn and saddle (to earn compassion).

Say lightning to rockface to gain access to lighthouse.

STRATEGIC PLUS SOFTWARE

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STRATEGIC PLUS SOFTWARE

DUNGEONMASTER (FTL) the long awaited role-playing game from the producers of 'Sundog' has finally arrived 1 megabyte of animated graphics and digitised sound has been compressed onto a single 1/2 megabyte disk, to give us possibly THE adventure game of the year! 'Real-time' action requires life-like decisions to be made about your party, as they grow tired or hungry, or are confronted by traps, puzzles or monsters, YOU are there! Choose up to four party members of different types from the selection found in the Hall of Champion or design your own. Superb graphics and excellent use of the mouse, allow easy access to individual party members and their various weapons, clothes, armour and accoutrements. Highly detailed 3D view of the corridors and rooms of the dungeons and the animated monsters appear in front of you during combat! Unique magic system requires logic and actual practice, to discover and master those all important spells! Comes highly recommended and a must for the serious adventure gamer!

1 Player Designed by Doug Dell, Mike Newton, Denis Walker PRICE 24.95

UNIVERSAL MILITARY SIMULATOR (Rainbird) - a revolutionary new concept in the design and presentation of wargaming on the computer. Designed to allow the gamer to create any historical or famous battle that they may wish to simulate. Every aspect of the program can be modified or designed, from the battlefield to the time scale. Unique 3D perspective views of the battlefield, with 'zoom-in' feature and rotation of the battlefield. Full use of mouse and menu system with some optional keyboard commands, gives a very easy to use command system. Players can either opt to play with full control of the units, or to take the role of army commander and issue overall directives, with the computer handling movement and combat. Comes with 5 built-in scenarios! Arbela (331BC), Hastings (1066), Marston Moor (1644), Waterloo (1815) and Gettyburg (1863). Games, maps and units can all be saved and are all interchangable between each other. Alexander fights Cornwall at Gettyaburg! Includes printout and Hi-Res (mono) monitor options.

1-2 Players Designed by D Cera Oldran PRICE 24.95

EMPIRE (Interstel-) a grand strategy game, that although very simple to play, has become one of the most addictive strategy games we have offered on any computer. The game commences with you owning one city, from wihch your produce armies, aircraft and if on the coast, submarines, transports, destroyers, cruisers, battleships and carriers. The surrounding area is unkown, therefore the initial stages of each game involves exploration and finding the enemy. Combat is very simple and requires long-term planning, as attacks must be carried out in waves to succeeed. Graphics are also simple and straight -forward, with the mouse and menus being used to their full effect. The game runs on a semi-real time system, with orders being given, when either the intial orders have been completed by the unit or units come into contact with blocking terrain or enemy units. Features include amphibious landings, automatic patrol of aircraft and ships, movement of 'blocks' of units and a complete design of your own map kit, in addition to the varied maps included in the game. Two levels of play in addition to the variable production and combat levels Also (mono) monitor option.

1-3 Players Designed by Interstel Price........................£43.00

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BRAVE NEW WORLDS

Wot, no *Ultima* reviews? Where are they, Pilgrim-person??

My apologies, fellow Pilgs, but don't despair – we have good reason for our actions!

First, we received two more new fantasies this month (*Questron II* and *Might'n'-Magic*) which, being new releases, needed the space we had set aside for the *Ultima* games. Second, despite the original release schedules, the new *Ultima V* adventure is still not available and it seemed sad to cover the series without being able to look at the latest and probably the greatest of them all. We live in hope for next month...

Every dark cloud has a silver lining, however. The big deal, Pilglings, is that we are planning to make this section even BIGGER and BETTER from now on, so that we won't suffer so badly from space problems in the future. It's no coincidence that we received two new fantasy role-playing games in one month – the market is growing very rapidly and the new 16-bit machines are ideally suited to this kind of software. We've therefore decided to EXPAND the size of this section, covering areas of science fiction, fantasy, interactive fiction, cave dwelling, and spell casting. No doubt about it, it's going to be a winner!

...AND we want YOU to help us. We're not going to thrust this new section upon you – we want you to tell us what you want and how you want it. To this end, we'll be printing in the magazine next month a special questionnaire. There'll be a special prize draw for those sending it in, with some fantastic adventure software up for grabs. Don't miss it, or you'll miss out on your chance of shaping the future of the country's bravest new world...

IN BRIEF

'...*Beyond Zork* is definitely the first game where you're on Cloud 9 for ages. When you search the treasure at the end of the game to find the Coconut (Fanfares!) you then get the best ending I've seen to an adventure game, barring *Trinity*. There's a real feeling of satisfaction when you 'press anykey to exit' – no kidding.
Rob Marshall, Congleton

Yessir, *BZ* is a scorcher. Did you know that role-playing is now the largest growth area on the States' adventure scene? It's success is bound to influence other, more traditional adventure software houses.

'Whilst the Pilgrim may consider D&D to be 'the role-playing game par excellence', I have a different opinion. It's rather a limited game in that the only way players can gain experience points is through combat. This can be damaging to the game, with players acting totally out of character to go up a level.

Other games that do not have these restrictions placed upon them are far better. Two of these are *Warhammer Fantasy Roleplay* and *Stormbringer*. They both use different system of advancement, which produce characters shaped more by the player and less by rulebook.

WFRP, for example, uses a system of career advance talbes to allow the player to progess from an apprentice level to mastership. as in real life this doesn't happen overnight and does require experience, but these are given more for good roleplaying than combat skills. The character can change career and doesn't have to stick to a generic class such as MAGIC USER but can specialise and become, say, an ELEMENTALIST or any other of countless types, but the character is modelled by the player, and this makes the player feel he knows the character, encouraging better role-playing. The system used by Stormbringer, although different, has similar advantages.

D&D players may disagree with what I've said about the game, but before they criticise I think they should try the systems I have mentioned – they will find them infinitely better.
Simon Felton, Kislingbury

Thanks for these interesting points, Simon. Actually, I am well aware of the games you mention, but didn't include them in the article, since it was primarily about computer games. I used D&D as an illustration simply because it is well known amongst non-role-players. We should also give it credit for its role in raising public interest in role-playing games in general.

PAT'S PATCH

Adventures often contain non-player characters, and usually they're as static as the scenery. To add a bit of spice to your game, why not have dangerous characters patrolling the playing area on a regular beat which the player must work out in order to avoid danger?

The following GAC routine does just that and works by using an object (no. 50) as a character and moving that object from room to room as the game progresses. Also needed is a counter (we'll use counter 100), a marker (marker 100) to check the progress of the character and a set of rooms, say 4 to 8 inclusive where the character can be. We'll start the character off in room 4, send it through rooms 5,6,7 and 8 then turn round and come back again.. and again.. and again......

- Line 1 loads counter 100 with the character's start room and marker 100 shows the direction of travel. This should go in your initialisation line unless the patrol begins after another event (a door opened or an alarm set off perhaps) – then make line 1 part of the action for that event instead.
- Line 2 is acted on if the character is going up the room numbers but not at the end yet.
- Line 3 is done when the character reaches the highest numbered room on its beat. It resets the marker to show the direction of movement has changed and reduces counter 100.
- Line 4 is the reverse of line 2 and line 5 the reverse of line 3.
- Line 6 simply looks up the number in counter 100, treats this as the new location of the character object, and moves the object to it.

There's nothing to stop you having several characters in your game each with separate or possbly intersecting beats. In fact you could create an interesting maze situation and make the player avaoid a whole host of enemies with different patterns of movement in the same area. You could even have characters interacting with each other if they meet, the player controlling the time they start their patrols.

INITIALISATION LINE (part of it)

```
1) 4 CSET 100 SET 100
```

HIGH PRIORITY

```
2) IF ( CTR 100 < 8 AND SET? 100 )
INCR 100 END (going up!)
3) IF ( CTR 100 = 8 AND SET? 100 )
DECR 100 RESE 100 END (about turn)
4) IF ( CTR 100 > 4 AND RES? 100 )
DECR 100 END (going down)
5) IF ( CTR 100 = 4 AND RES? 100 )
INCR 100 SET 100 END (about turn)
6) 50 TO CTR 100 END (put characte
object at room (ctr 100))
```

ACE PINK PAGES

Want to know the best games to run on your micro? Want all the facts and figures on the latest hardware? Look no further – it's all in the Ace Pink Pages. You'll also find our regular Reader to Reader section, plus this month's brain-teasers in the Random Access pages.

ACE RECOMMENDED SOFTWARE

ARCADE ADVENTURES

These games usually give the player a joystick controlled character with which to explore the huge game area.

AIRBALL

Microdeal ● Atari ST £24.95dk

Multi-coloured three-dimensional arcade adventure that owes something to the Ultimate style but is years ahead in terms of graphic detail and presentation. You, as the airball in question, must negotiate corridors and rooms full of various obstacles – all spelling instant death. An outstanding rendition of a popular genre.

DUNGEON MASTER

Mirrorsoft ● Atari ST £24.99dk

This fascinating arcade adventure cum role playing game is the sort of thing your ST was made for. Check out the main review on page 54.

EAGLE'S NEST

Pandora ● Amiga £19.95dk ● Atari ST £19.95dk

This is one of the better *Gauntlet* clones, especially on the 16-bit machines. The military flavour of the arcade adventure adds atmosphere and if you like this particular style of game, you won't be disappointed with *Eagle's Nest*.

HEAD OVER HEELS

Ocean ● Spectrum £7.95cs ● C64 £8.95cs £12.95dk● Amstrad £8.95cs £14.95dk ● MSX £8.95cs ● IBM PC £19.95dk

3D exploration reaches its peak with this huge intricate masterpiece. You play two characters – Head and Heels – as you search for the crowns that will free the galaxy. The puzzles can get very difficult indeed, and you'll often have to split Head and Heels up to use their different capabilities. The game's 300 locations are wittily drawn, and the animation is excellent throughout. A real classic.

MAGIC KNIGHT TRILOGY

Mastertronic ● *Knight tyme* Spectrum £2.99cs Amstrad £2.99cs ● *Spellbound* Spectrum £2.99cs Amstrad £2.99cs C64 £2.99cs ● *Stormbringer* Spectrum £2.99cs Amstrad £2.99cs

This trilogy is a series of menu-driven arcade adventures which, as well as all the expected running and jumping, have a complex system of interaction between characters. In *Spellbound* you must rescue Gimbal the Wizard from the fearsome Castle of Karn; in *Knight Tyme* you have to find a way back in time after being catapulted into the 25th century, while in *Stormbringer*, the final part, we find that the magic knight has been split in two, one part good, the other evil. You can't kill yourself, so the only solution is to merge the two halves. But how? Lots of action, plenty of thought and good graphics make all three winners.

SIMULATIONS

Games that put you at the contols. Whether you're flying helicopters or aeroplanes, or steering bobsleighs, simulation games can become very involving.

BOBSLEIGH

Digital Intergration ● Spectrum £9.95cs ● Amstrad £9.95cs £14.95dk

Bobsleigh is a highly competent and addictive simulation with more than a little strategy. Have you got the stamina to finish in the top three by the end of the season? Remember, sponsors don't back losers. *Bobsleigh* is available for the C64, but it's a poor game compared to the Amstrad and Spectrum versions.

CHUCK YEAGER'S ADVANCED FLIGHT TRAINER

Electronic Arts ● C64 £9.95cs £16.95dk ● PC £24.95dk

Chuck Yeager's flight trainer takes the flight simulator genre a step further by including a training option. Chuck will guide the novice through such difficult moves as aileron loops and rolls. With so much in one package it'll take many hours of fun to master all the options.

FLIGHT SIMULATOR 2

Sub-Logic ● Atari ST £49.95dk ● Amiga £49.95dk ● IBM PC £49.95dk

The venerable godfather of flight simulations, *Flight Sim II* is the standard by which all others are judged. Although it spent a zillion weeks on top of the US charts, it's difficult to get hold of in the UK. If you have the technology, this is an essential purchase.

GUNSHIP

Microprose ● PC £34.95dk

Excellent graphics, involving simulation and a variety of missions make this one of the better PC games. Piloting your 'copter around in order to zap various gooks may not be terribly tasteful, but politics aside you should have a lot of fun.

LEADERBOARD

Access/US Gold ● Spectrum £8.99 ● C64 £9.99cs £14.99dk● Amstrad £9.99cs £14.99dk ● Atari ST £19.99dk

If you only buy one golf simulation for your collection, make sure it's *Leaderboard*. It's head and shoulders above everything else on the playability and realism stakes, easy to get into, with delightful graphics and some wicked courses. Once you've mastered those on the original version, tackle *Tournament Leaderboard* and then *World Class Leaderboard* (based on real courses, including St Andrews, and also containing the Gauntlet Country Club, a course devised to be as difficult as possible).

TOMAHAWK

Digital Integration ● Spectrum £9.95cs ● Amstrad £9.95cs £14.95dk ● Atari ST £24.95dk

One of the all-time great flight simulators, *Tomahawk* also has a strong combat edge to it. Flying a US Army Apache helicopter is a complex business, and the game's realistic controls make no concessions for learner pilots. Choose one of the three combat missions and you can fly out to attack ground targets, while keeping a weather eye open for enemy aircraft. Landscape, buildings and vehicles are all drawn in crisp vector graphics.

ONLY THE BRAVEST FLY...
CASSETTE

STRATEGY GAMES

For megalomaniacs. The games listed in this section will really test your mettle on the battlefield.

BALANCE OF POWER

Mindscape/Mirrorsoft ● Amiga £26.95dk ● Atari ST £26.95dk ● IBM PC £26.95dk ● Mac £26.95dk

Definitive strategy game for 16-bitters. The player takes the role of one of the superpowers, while either the computer or a friend takes the other. Then it's a case of trying to win friends and influence people on a global scale. This can be achieved in a number of ways, including supplying arms or financial aid to radical factions in the hope of toppling a government which is not receptive to the great American or Russian dream (depending on which side you're playing). It's complex, involving and it's difficult to play in ten minute sessions. Absorbing stuff that gives an insight into the devious world of geopolitics.

DIPLOMACY

Leisure Genius ● C64 £12.95cs £14.95dk ● PC £24.95dk

The grand old man of nasty negotiation boardgames finally made it onto home computers and how! The game can handle up to seven players and it's an engrossing and madly addictive game that's a must for micro megalomaniacs.

UMS

Rainbird ● Atari ST £24.95dk ● IBM PC £24.95dk ● Macintosh £34.95dk ● Amiga £24.95dk

Rainbird's Universal Military Simulator is designed to simulate a conflict between two forces on a user-definable terrain that can be viewed in three-dimensions from any one of eight directions. The program heralds a new era in 16-bit computer wargaming. The ST version is available now with the other versions following shortly.

VULCAN

CCS ● Spectrum £9.95cs ● Amstrad £9.95cs

An elegant, simple and ingenious wargame, *Vulcan* covers the Tunisian campaign of 1942-43. A huge playing area and air attack phase make the game an improvement over the same author's earlier works *Arnhem* and *Desert Rats*. *Vulcan* is fast, efficient and simple to play, and no self-respecting wargamer should be without it.

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PUZZLES

If you're after a game that will provide you with a real challenge, without neccesarily requiring large doses of strategic thinking, then it's a puzzle game you want.

BONECRUNCHER

Superior Software ● C64 £9.95cs £11.95dk ● Amiga £14.95dk

At first sight this recent release may appear to be nothing more than a *Boulderdash* rip-off. However there are a number of highly innovative gameplay features which give *Bonecruncher* a feel all of its own. Highly recommended for those who prefer to solve problems rather than shoot them.

BONE CRUNCHER

BOULDERDASH

Prism Leisure Corporation ● Spectrum £2.99cs ● C64 £2.99cs ● Amstrad £2.99cs

A game that has everything – instant addiction, long-term challenge, frenetic excitement as the clock ticks down and extremely tricky puzzles. Collect jewels hidden in caverns, digging away earth and boulders to get at them. Boulders can drop and cause you serious damage, while the jewels are often hidden by seemingly impenetrable walls. Complex, but great fun. *Boulderdash* is a classic you can't afford to miss in budget form.

DEFLEKTOR

Gremlin/Vortex ● Spectrum £7.99cs ● C64 £9.99cs 14.99dk ● Atari ST £19.99dk

Juggle optics (not the spirit dispensers) as you try to connect a laser beam to a receiver and at the same time destroy a series of cells on-screen. You'll need to make full use of the mirrors, fibre-optic conduits and polarising and refracting blocks. Clear the first screen and you'll only have 59 more to do. Fascinating stuff that's horribly addictive.

NEBULUS

Hewson ● C64 £8.95cs £12.95dk ● Spectrum £7.95cs

Guide pogo to the top of eight towers using the spiral of platforms, lifts and ledges that form the route. It's a highly original game game that strikes a fine balance between frustration and addiction. Add the rotary scroll, and you have a good looking, playable winner.

SENTINEL

Firebird ● Spectrum £9.95cs ● C64 £9.95cs £14.95d ● Amstrad £9.95cs £14.95dk ● Atari ST £19.95dk

Bizarre yet compelling strategy game played over the chequered surface of a planet dominated by the Sentinel. Fundamentally, you have to absorb energy while stopping the Sentinel from absorbing yours. You need a clear brain and fast trigger finger for this very original and large (10,000 possible landscapes) game.

SKULLDIGGERY

Nexus ● Atari ST £19.95

Boulderdash clone that completely outdoes the original on this machine. Again (see *Boulderdash*, above) you're digging for diamonds in caverns over 100 different screens – with a time limit for each screen. *Skulldiggery* scores on playability (easier screens to begin with and a choice of starting point) and its entertaining two-player option.

SPORE

Bulldog ● C64 £1.99cs ● Amstrad £1.99cs ● Spectrum£1.99cs

The winning combination of strategy, frenzied blasting and great graphics make *Spore* a worthy full-price release - what a bargain then to be able to pick it up for £1.99!

TETRIS

Mirrorsoft ● Spectrum £8.99cs £19.99dk ● C64 £8.99cs £12.99dk ● Amstrad £8.99cs £12.99dk ● Atari ST £19.99dk ● Amiga £19.99dk ● IBM PC £19.99dk

A fascinating geometrical oddity, this Russian puzzler turns the obscure mathematical topic of packing into a cult game. One at a time, shapes fall downwards into a rectangular playing area. Left to their own devices they'll pile up until they reach the top of the screen: your task is to guide them down and pack them in tightly so that doesn't happen. Different versions have proved to be rather variable in their arcade aspects, but the brilliantly simple idea behind them means they're well worth a look whatever your machine.

THINK!

Firebird ● Spectrum £1.99cs ● C64 £1.99cs ● Amstrad £1.99cs

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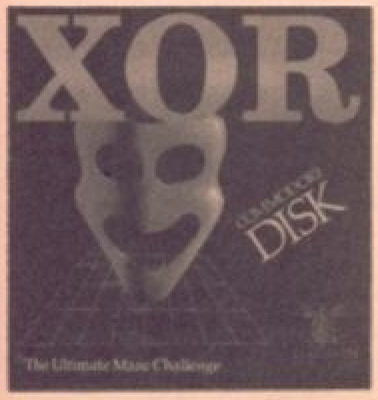

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Rummy-like oriental game of strategy and chance. A tutor program and short manual make this an easy to use and highly entertaining piece of software for veterans and novices alike.

INFOGRAMES' BRIDGE

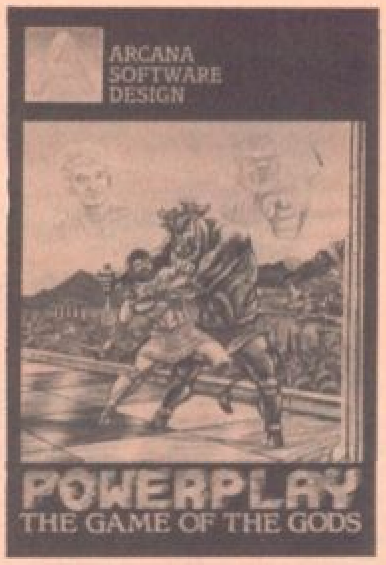
Infogrames ● Amstrad £12.95cs £15.95dk ● MSX £12.95cs

Graphically the best of all contract bridge simulations, with large playing cards depicted against a suitably green baize background. Plays a good game (for a computer, which after all is a bit short in the imagination and flair department), and features a wide range of options and bidding conventions which you can toggle on and off according to your style.

POWERPLAY

Arcana ● Amstrad £8.95cs £14.95dk ● C64 £8.95cs £14.95dk ● Amiga £19.95dk ● Atari ST £19.95dk

If you want to try out your general knowledge, we reckon you'd be better off with this original and challenging combination of strategy game and quiz than with the admittedly monster-selling *Trivial Pursuit.*



Powerplay is graphically very pretty in its setting on Mount Olympus, home of the Gods.

SCRABBLE

Leisure Genius ● Spectrum £9.95cs ● C64 £12.95cs £14.95dk ● Amstrad £9.95cs £14.95dk ● IBM PC £24.95dk

The hugely popular word game translated very successfully onto the micro. Fast, excellent display, and a surprisingly large vocabulary (even if it does include some strange looking words on occasions). Good enough to give even strong human opponents a tough game at the higher levels.

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Conversion from *Arkanoid* the coin-op, in its turn the best version of the classic *Breakout*. Simple in concept: the player controls a bat at the base of the screen, whizzing it left and right. The object is to keep a small ball in play, bouncing it off the bat to destroy formations of bricks in the top half of the screen. Eliminate all the bricks and move on to the next of 33 screens. Clever extra features contribute to the addictiveness. As a faithful coin-op conversion, *Arkanoid* comes out top, but for a different slant on the same theme and some nifty music, try ASL's *Impact*, which also builds up the difficulty levels more gradually.

BOUNDER

Gremlin Graphics ● Spectrum £7.95cs ● C64 £9.95cs £12.95dk ● Amstrad £8.95cs £13.95dk ●

A great arcade bounce-em-up, and very addictive too. You guide a ball as it bounces from one platform to another, high above the vertically scrolling landscape. Land on marked squares and you can stay aloft longer or gain a mystery bonus. Fill in a gap or hit one of the game's many nasties, however, and you'll lose a life. Bonus bouncing sections at the end of each level help vary the pace, and those tough gaps really keep you coming back for more. Bright, witty graphics, great music – and it's so playable.

BUBBLE BOBBLE

Firebird ● Spectrum £7.95cs ● C64 £8.95cs £12.95dk ● Amstrad £8.95cs £14.95dk ● Atari ST £19.95dk

Playability is the essence of this two-player coin-op conversion. You and a friend play bubble-blowing dinosaurs, travelling through 100 maze-and-platform screens, fighting off the "bullies" by encapsulating them in your bubbles to turn them into juicy fruit. More firepower and various bonuses await as you reach the more difficult later screens. Enormously good fun, if a little on the cutesy side. Can also be played as one player against the computer.

BUGGY BOY

Elite ● C64 £9.95cs £14.95dk ● Amstrad £8.99cs £14.95dk

A non-stop action driving game that will keep even the most ardent *Out Run* fans busy for a long while. Collect the time bonuses in the attempt to complete the five gruelling courses. Instantly playable and highly addictive, *Buggy Boy* should be on any racing fan's shopping list

COSMIC CAUSEWAY

Gremlin ● £9.99cs £14.99dk

The follow-up to the very popular bouncing ball game *Trailblazer*. The 24 stages of the scrolling landscape race toward you at breakneck speed as you try to guide your ball through the mulitude of obstacles. Less technically demanding than *Trailblazer* but much more fun and with tremendous variety.

EXOLON

Hewson ● Spectrum £7.95cs ● C64 £8.95cs £12.95dk ● Amstrad £8.95cs £14.95dk

Graphically superb horizontally scrolling shoot-em-up in which you run, duck and jump your way along a planet's surface blasting away at alien defences. A gun and a missile launcher are used to blast the foes, but if things are still too tough then you can grab an exoskeleton for extra protection and fire power.

HIGHWAY ENCOUNTER

Vortex (available on *The Best of 3D* compilation from US Gold) ● Spectrum £8.99cs ● Amstrad £8.99cs

Each game in this compilation is an excellent example of Vortex's 3D animation and tough gameplay, but *Highway Encounter* stands out in both departments, as you plot your route along said highway fighting off threats from a mutant tribe of dustbins.

OIDS

Mirrorsoft ● Atari ST £19.99

A magnificent *Thrustish* blast. Check out the main review on page 44.

PITSTOP 2

Epyx/US Gold ● Available only on Epyx Epics compilation ● C64 £9.95cs £14.95dk ● IBM PC £29.95dk (in compilation with Winter Games and Summer Games 2)

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Thrilling racing game where the screen is split into two and you can race the computer or a friend. Lots of different Grand Prix circuits, tyre blow-outs and of course the all-important pitstops guarantee to give you hand cramp and your brain a real racing treat.

STARGLIDER

Rainbird ● Spectrum £14.95cs £19.95dk ● C64 £14.95cs £17.95dk ● Amstrad £14.95cs £19.95dk ● Atari ST £24.95dk ● Amiga £24.95dk ● IBM PC £19.95dk

Starglider is a shoot-em-up cum strategy game boasting vector graphics at their very best. The screen is essentially your view from the cockpit, your objective is to destroy the 'starglider', flagship of the Egron forces who have invaded your homeland Novenia. Standard issue scenario, but an outstanding game.

SUMMER GAMES

Epyx/US Gold ● C64 £9.95 cs £14.95dk ● Atari XE £14.95dk (Summer Games 1 only) ● IBM PC £29.95dk

Epyx sporting simulations are of high quality but none have quite captured the playability and style of the original *Summer Games* and its immediate successor, *Summer Games 2*. One to six players can take part in high jump, gymnastics, springboard diving, clay pigeon shooting, swimming, pole vault – and others – with lovely large graphics and smooth animation throughout. Control of your athlete can be complex so practice is recommended.

SUPER SPRINT

Electric dreams ● C64 £9.99cs £14.99dk Amtrad £9.99cs Spectrum £9.99cs ● Atari ST £19.99dk

One of the better coin-op conversions currently available. With up to three players all competing at once, the action is fast and furious and it will take a finely-tuned car to complete some of the more tortuous circuits that appear later in the game.

THRUST

Firebird ● Spectrum £1.99cs ● C64 £1.99cs ● Amstrad £1.99cs

Terrifyingly sensitive controls and a large helping of real-life physics make this budget title an absolute must. Flying down through the caverns of an enemy-held planet, you have to pick up fuel and destroy hostile gun turrets without crashing into the tunnel walls. Tough enough as it is, but then you've got to make the return journey with a heavy load slung under your craft. Very mean, very addictive.

THUNDERCATS

Elite ● C64 £9.95cs £14.95dk ● Spectrum £7.95cs ● Amstrad £8.95cs £14.95dk

The game based on the hit TV series/comic/plastic toy. It's a side-on view scroller that just oozes gameplay. Each of the game's 14 levels is a straight line dash from start to finish with a multitude of obstacles to avoid along the way. Graphically impressive and compulsively playable too.

URIDIUM

Hewson ● Spectrum £8.95cs ● C64 £9.95cs £12.95dk ● BBC £9.95cs £14.95dk

The piece de resistance of scrolling shoot-em-ups: blast the dreadnought and attacking ships while dodging around any large structures. Great metallic-looking dreadnoughts and the smoothest scrolling you'll ever see put this head and shoulders above the opposition. A game not to be missed, especially now that C64 versions come packaged with the excellent *Paradroid*.

ZARCH

Superior Software ● Archimedes £19.95dk ● Amiga and Atari ST versions under development.

ACE'S highest rated game to date. A solid three dimentional shoot-em-up with such graphic perfection and timelessly addictive gameplay that it became an instant classic. *Zarch* could do for the Archimedes what 'the juggler' did for the Amiga.

SPECIALS

Original works that are simply unclassifiable feature in this section.

ATF

Digital Integration ● C64 £8.95cs £12.95dk ● Spectrum £8.95cs £12.95dk ● Amstrad £8.95cs £13.95dk

Excellent combat/flight simulator that's a bit of a change for Digital Integration, the simulation specialists. The emphasis is on solid action, the result being a sure-fire hit.

DRILLER

Incentive ● C64 £14.95cs £17.95dk ● Spectrum £14.95cs £17.95dk ● Amstrad £14.95cs £17.95dk ● IBM PC £19.95dk

This three-dimensional masterpiece of exploration and adventure took a year to develop, but the wait was worth it. A whole world was crammed into 8-bit micros to give the player such a feeling of 'being there' it's uncanny. It's bold, dazzlingly original and very playable. A milestone in computer entertainment.

ELITE

Firebird ● Spectrum £14.95cs ● C64 £14.95cs £17.95dk ● Amstrad £12.95cs £14.95dk ● BBC £12.95cs £14.95dk (available from Superior Software)

Still the best space trading game, *Elite* set a standard for other companies to follow. One of the first space games to use vector graphics, it's a shooting and trading effort set across several galaxies, with plenty of variety to the gameplay. You can trade legal goods in (relatively) safe systems, or run the gauntlet of pirates in the galaxies' danger spots with your hold full of contraband. Either way there's a nice line in zero-G dogfighting, and as big a task as you'll find anywhere.

MAGNETRON

Firebird ● Spectrum £7.95cs ● C64 £8.95cs £12.95dk

Puzzles and action Steve Turner style. See main review on page 51.

MATCH DAY 2

Ocean ● Spectrum £7.95cs £14.95dk● C64 £8.95cs £12.95dk ● Amstrad £8.95cs £14.95dk

Definitely *the* football game on micros; magnificent animation, great gameplay, vicious and skillful computer opponents. Various improvents over the original make this a must for all computer football fans.

QUEDEX

Thalamus I C64 £9.99cs £14.99dk

In this impressively challenging game you must steer a metallic ball through ten different screens of mazes, bonuses and obstacles, all within a set time limit. This simple game concept has a host of added features to make it particularly pleasing: you can carry over unused time to the next screen, for example, and tackle the different screens or 'planes' in any order you wish. Excellent graphics and utterly absorbing play.

SPINDIZZY

Electric Dreams ● Spectrum £9.99cs ● C64 £9.99cs £14.99dk ● Amstrad £9.99cs £14.99dk

Tremendous stuff; steer your spinning top over tough obstacles and collect jewels, against a fiendish time limit. The game landscape is a vast system of catwalks, ramps, towers, and trampolines surrounded by lethal drops – and NO safety rails. Floor switches activate lifts and bridge gaps, but tripping them in the right order can be harder than it looks. A few bad guys and a lot of nice touches, but the exploration's the thing.

TAU CETI/ACADEMY

CRL ● Spectrum £9.95cs ● C64 £9.95cs £14.95dk ● Amstrad £9.95cs £14.95dk ● Atari ST £19.95dk ● Amiga £19.95dk

Flight simulator/shoot-em-up and its sequel which are both incredibly smooth and well put together. The attention to detail is impeccable as you set off on hair-raising missions as a space cadet. In *Academy* you get to design your own space skimmer craft as well.

WIZBALL

Ocean ● Spectrum £7.95cs ● Amstrad £8.95cs £12.95dk ● C64 £8.95cs £14.95dk

A compelling and original ball game in which you become the wizball and must set out to conquer the 'colour creatures' which are intent on eliminating the spectrum and rendering the landscape grey and drab. Controlling the wizball is great fun and makes this one of the most playable games to have appeared for a long time.

SPECTRUM 48 · 128
WIZBALL

ADVENTURES

Adventure games require text input from the player and give a text response in return. There are many sub-categories, involving icon-control, graphic depiction of locations, and even speech output.

THE BARD'S TALE

Electronic Arts ● C64 £14.95dk ● Amiga £24.95dk ● Atari ST £24.95dk ● IBM PC £24.95dk

Build a party of up to six adventurers and sally forth through the city in search of treasure, combat, and fame. Your character develops in experience during play and the task involved is pretty immense – don't expect to finish it inside a month or two.

BEYOND ZORK

Infocom/Activision ● C64 £19.99dk ● Amiga £24.99dk ● IBM PC £24.99dk● Atari ST £24.99dk

Infocom's attempt to muscle in on the role-playing market is a great success. Locate the fabulous Coconut of Quendor in a game that combines the wit and ingenuity of one of the world's most original software companies with state-of-the-art parsing and gameplay. Text-only, but with an on-screen mapping facility.

GUILD OF THIEVES

Rainbird/Magnetic Scrolls ● C64 £19.95dk ● Spectrum £15.95dk ● Amstrad 6128 £19.95dk ● Amiga £24.95dk ● IBM PC £24.95dk ● Atari ST £24.95dk ● Macintosh £24.95dk

Britain's newest adventure software house produces a classic, traditional treasure hunt with state-of-the-art graphics and some very tricky puzzles. Powerful parser helps create a convincing gameworld with humour and imagination.

JEWELS OF DARKNESS

Rainbird/Level 9 ● C64 £14.95cs ● Spectrum 128 £14.95cs ● Amstrad £14.95cs £19.95dk ● IBM PC £19.95dk ● Amiga £19.95dk ● Atari ST £19.95dk ● Macintosh £19.95dk

Level 9, Britain's oldest adventure programming family, have put together three of their classic releases, *Collossal Adventure*, *Dungeon Adventure*, and *Adventure Quest* on one disk. The games have been uprated with graphics and larger vocabularies and are as close to the original spirit of adventuring that you're likely to find.

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	IN BRIEF	GRAPHICS & SOUND	
ACORN ARCHIMEDES			
Models: Archimedes 305, 310 and 310M **Package:** Keyboard, mouse and drive; keyboard, mouse, drive plus monitor (colour or mono); 310M – M denotes inclusion of PC emulator **Memory:** 305 512K; 310 1Mb **Processor:** Acorn ARM **Recommended Retail Price:** Ranges from £801.60 for 305 alone to £1188.00 for 310M with colour monitor	At the cutting edge of micro technology – thus not cheap. Nor does it have the software base of longer-standing machines. Very exciting, but best left to the real enthusiasts for now.	**Resolution:** Either 320 x 256 or 640 x 256 or 640 x 512 (multi-synch monitor) **Palette:** 4096 **Colours:** From mono up to 256 (320 x 256) or 16 (640 x 512) **TV:** No **Monitor** output: Mono – composite video; colour – RGB + sync **Monitor supplied:** Depends on package bought	**Monitor Options:** Acorn dedicated 14 inch medium res. colour; 12 inch high res mono **Sprites:** 1 **Speed:** Very fast *** **Speaker quality:** Good **MIDI:** Yes **Stereo output:** Yes **Performance:** 16 channels (8 stereo pairs); 6 octaves, one internal loudspeaker.
AMSTRAD CPC			
Models: CPC464; CPC664; CPC6128 **Package:** Keyboard, monitor (mono or colour) plus built-in tape/disk, plus software (usually 12 games), joystick. CPC664 is no longer manufactured but may be available on special offer from retailers in different packaging configurations. **Memory:** 464/664 64K; 6128 128K **Processor:** Zilog Z80 **Recommended Retail Price:** 464 mono £199.99; 464 colour £299.99; 664 unavailable; 6128 mono £299.99; 6128 colour £399.99	The Amstrad CPC family is a value-for-money and versatile breed. You get everything you need and the whole business needs just one plug. They'll do sterling service as games micros, but they are also able to turn their hands to more serious matters.	**Resolution:** Mode 1 320 x 200; Mode 2 640 x 200; Mode 0 160 x 200 **Palette:** 27 **Colours:** Mode 1 – 4; Mode 2 – 2; Mode 0 – 16 **TV:** Yes **Monitor Output:** RGB + synch **Monitor Supplied:**Yes **Monitor Options:** Stick with Amstrad's own; need external power supply to use any independent models **Sprites:** None **Speed:** Acceptable, slow scrolling *** **Speaker Quality:** Adequate **MIDI:** No **Stereo Output:** Yes, needs cable	**Performance:** 3 channels. Has 8 octaves, but is basically as for the Spectrum +2 – does have stereo output, if a little rudimentary.
AMSTRAD PCW			
Models: PCW8256; PCW8512; PCW9512 **Package:** 8256 – keyboard, monitor with built-in single disk drive, dot matrix printer, Locoscript 1 word processing software, CP/M operating system, DR Logo; 8512 – as above but with two built-in drives; 9512 – restyled keyboard, monitor with single built-in disk drive, daisy wheel printer, Locoscript 2 word processing softwre **Memory:** 8256 256K; 8512 512K; 9512 512K **Processor:** Zilog Z80 **Recommended Retail Price:** PCW8256 £343.85; PCW8512 £458.85; PCW9512 £573.85	The PCW range was designed as a word processing machine rather than a general purpose computer. Non-word processing software was produced after sales rocketed. Not recommended as a games machine.	**Resolution:** 720 x 256 **Palette:** 8256, 8512 green and black; 9512 black and white **Colours:** N/A **TV:** No **Monitor Output:** No **Monitor Supplied:** Monochrome only, giving 90 column text display **Monitor Options:** No **Sprites:** No **Speed:** Not very fast *** **Speaker Quality:** N/A **MIDI:** Add-ons available **Stereo Output:** No	**Performance:** Beeps only. Some third party sound enhancement modules available
APPLE MACINTOSH			
Models: Macintosh SE; Macintosh II **Package:** Monitor with built-in CPU and disk drive, separate keyboard **Memory:** 1Mb **Processor:** SE Motorola 68000; II Motorola 68020 **Recommended Retail Price:** SE £2,294.25 upwards; II £4,329.75 upwards	A very expensive up-market machine for those keen on desk-top publishing, wimp systems and up-market software. Software is very expensive. Games are mostly limited to icon-driven adventures. Good for MIDI musicians, but be prepared to pay through the nose.	**Resolution:** SE 512 x 342; II 1027 x 760 **Palette:** SE black and white; II with colour monitor – 16 million **Colours:** With colour monitor – 16 to 256 **TV:** No **Monitor Output:** Integral monitor **Monitor Supplied:** Built-in **Monitor Options:** SE – use dedicated model only; II Apple hi-res monochrome or AppleColor hi-res RGB **Sprites:** None **Speed:** Reasonably fast	*** **Speaker Quality:** Good **MIDI:** Third party interfaces available **Stereo Output:** SE no; II yes **Performance:** 4 channels. Performance good
ATARI ST			
Models: Atari 520STFM; 1040STF, Mega STs **Package:** 520STFM and 1040STF keyboard with built-in disk drive **Memory:** 520STFM 512K; 1040STF 1Mb; Mega ST 2 or 4Mb **Processor:** Motorola 68000 **Recommended Retail Price:** 520STFM £299.99; 1040STF £499.99	Excellent as a general purpose home machine for games, small businesses, and productivity – it's the number one choice for MIDI musicians. The ST's price could still give it the edge for artists over the Amiga.	**Resolution:** High res 640 x 400; medium res 640 x 200; low res 320 x 200 **Palette:** 512 **Colours:** Monochrome in high res, 4 colours in medium res, 16 in low res **TV:** 520STFM yes; other models via TV modulator **Monitor Output:** RGB Monochrome **Monitor Suplied:** No **Monitor Options:** Atari monitors: SM124 high res mono, SC1224 med res colour **Sprites:** None **Speed:** **High resolution is only available on mono**	**monitors; medium and low resolutions are only available on colour monitors or TVs** *** **Speaker Quality:** **MIDI:** Yes **Stereo Output:** No **Performance:** Three channels; 8 octaves, envelope shaping

BUYERS' GUIDE

HARDWARE & SOFTWARE	BUYLINES
Disk Format: 3.5 inch; 800K formatted; built-in drive **Disk Price:** Around £3.00 **Disk Performance:** Good and fast **Keyboard:** 103 keys, programmable auto-repeat rate. Keyboard has surprisingly cheap feel given quality of machine **Joystick/mouse:** 3 button mouse supplied; joystick not supported **Ports:** RS423 serial; Centronics compatible parallel; 9-pin mouse socket; 3.5mm stereo jack; 64 way din; 41612 expansion port; IEC 320 video outlet; I/O interface (BBC compatible) *** **Existing Software Base:** One game (Zarch); couple of databases (from Minerva Systems), art packages under development **Current Releases:** See above **Games:** One arcade title (ACE Rated 979) and at least one more on the way. A couple of adventures under development **Graphics:** Potential is enormous; currently a couple of packages in the pipeline **Music:** Again, enormous potential. Very little activity as yet, however **Prospects:** Very good, but not necessarily for games market **Software Loading:** Competent, no obvious drawbacks	**Best buy price:** As RRP **Second hand availability:** Not yet **Maintenance:** One year's guarantee. Faulty machines – return to dealer
Disk Format: 3in flippable; 180K formatted per side; 664 and 6128 drives built-in, 464 drive extra **Disk Price:** About £3.00 **Disk Performance:** Reliable and quick **Keyboard:** 74 raised plastic keys with audible tactile feedback. Separate cursor cluster and redefinable numeric keypad. Very useable for word processing etc **Joystick/Mouse:** Standard 9-pin D-type. Third party mouse devices are available. **Ports: CPC464** PCB edge connector – takes disk drive and RS232C interface. Centronics parallel. 6-pin Din RGB with synch luminance, synch 3.5mm stereo socket, joystick, cassette port. **CPC664/6128** PCB edge connector – takes RS232C interface. Centronics parallel printer, add-on disk socket, joystick, cassette port. RGB with synch luminance, sync 3.5mm stereo socket, expansion I/O, TV *** **Existing Software Base:** Good, even if not as large as Spectrum or C64 **Current Releases:** Reasonable; most major Spectrum and C64 titles are converted **Games:** Good, but some converted titles run slower than the Spectrum or C64 originals. Adventures OK, but Infocom considering withdrawing support for this format. **Graphics:** Good selection of titles **Music:** Reasonable number of titles, but poor in comparison with C64 **Prospects:** Uncertain. After initial interest, sales of CPC software have dwindled but there should still be a reasonable amount of games and utilities around. **Software Loading:** Tape loading is reasonably quick and reliable; disk loading fast and reliable	**Best Buy Price:** Shop around for best package. You could try for a CPC664 for around £60.00, but these are becoming increasingly rare. If the extra memory of the 6128 is not important, the CPC664 can represent a bargain, if you can find one. **Second Hand Availability:** Very good. Often plenty on offer in classified ad sections of specialist magazines. **Maintenance:** One year's guarantee. Faulty machines return to dealer. 664 statutory rights only.
Disk Format: 3in flippable; 180K formatted per side – 8512 drive B and 9512 720K formatted; drive's built-in **Disk Price:** About £3.00 **Disk Performance:** Fast and reliable **Add-on drives have been produced to take 5.25in disks, so that standard ASCII files in CP/M format can be transferred to the PCW machines** **Keyboard:** Includes extra keys for word processing functions. Keyboard in 9512 a substantially improved version. **Joystick/Mouse:** Not supported. Joysticks and mice can be attached via a separately bought interface. **Ports:** One expansion port takes RS232C serial and Centronics Parallel interface; printer port for bundled printer. *** **Existing Software Base:** Not wide but generally programs of good quality. Appeals to specialist/niche type markets. **Current Releases:** Very few. **Games:** Arcade titles are very scarce and, of course, monochrome only. Adventures are slightly more numerous, but again the range is small. A number of Infocom titles available under CP/M, but outlook for future releases uncertain. **Graphics:** Very few but some low-end CAD-type software available. **Music:** None – machines not configured as such. **Prospects:** Would be poor but for launch of 9512. Revival will depend on new machine's popularity. **Software Loading:** Fast and reliable	**Maintenance:** One year's guarantee. Faulty machines return to dealer. **Best Buy Price:** Not generally sold below RRP. **Second Hand Availability:** For 8256 and 9512 good. 9512 too new for second hand market as yet.
Disk Format: 3.5in; 800K formatted; drive built-in **Disk Price:** Around £3.00 **Disk Performance:** Fast and reliable, but watch out for US software that hasn't been thoroughly tested **Keyboard:** Supplied 81 keys including function keys and numeric keypad. Optional extra is the Apple Extended keyboard, with 105 keys **Joystick/Mouse:** Joystick not supported. High quality one-button mouse supplied with machine **Ports:** SE – Apple Desktop Bus connector, 2 RS232/RS422 serial. External disk drive, 96-pin Euro-Din expansion slot SCSI – DB-25 connector. External audio amplifier; II – 2 RS232/RS422 serial DB-25 SCSI T *** **Existing Software Base:** Wide range of software exists in virtually all fields except games. **Current Releases:** Adequate; largely of US origin and in the business or DTP field. **Games:** Very few arcade games, but adventures are more plentiful. **Graphics:** Lots of interesting software for those involved in DIY publishing. **Music:** Very well supported for MIDI software – but it's expensive stuff. **Prospects:** Excellent, especially in business and DTP. **Software Loading:** Quick and reliable.	**Best Buy Price:** There isn't much of a discounted market in Macs; you generally have to pay the list price. **Second Hand Availability:** Reasonable, but not exactly cheap. Check small ads in specialist magazines. **Maintenance:** One year's guarantee. Apple offers Applecare – 'insurance' you take out to cover cost of repairs after guarantee has lapsed.
Disk Format: 3.5in; 360K formatted (05 Mb drive), 720K (1Mb drive); drive built-in **Disk Price:** About £3.00 **Disk Performance:** Fast and reliable **Keyboard:** 96 keys including 10 function keys. Full travel keyboard with audible click **Joystick/Mouse:** Joystick ports are standard. Two-button mouse supplied with machine. **Ports:** MIDI out (5 pin DIN), MIDI in (5 pin DIN). Audio out. Audio in. RGB monitor, mono monitor, serial modem port, second disk, hard disk, mouse joystick, joystick, cartridge, TV *** **Existing Software Base:** On the low side by 8-bit standards, but best-supported of the new machines **Current Releases:** Most major software houses convert their output to ST now, and several smaller houses specialise in ST titles **Games:** Range of arcade titles isn't bad. Adventures are rarer but generally of very good **Graphics:** Impressive, with several first-rate packages on the market **Music:** Excellent. Many companies producing sound editors, smaplers, synths, etc **Prospects:** Very bright. Could soon rival Spectrum and C64 for number of new releases **Software Loading:** A 360K disk can't hold a really large ST program, so two-disk titles are becoming increasingly common. The disk-changing these require can get tedious, especially where you've got to swap disks during play	**Best Buy Price:** You won't get much under the RRP, but try for special bundles. **Second Hand Availability:** Yes, look in classified ads of magazines. **Maintenance:** One year's guarantee. Return to dealer if faulty

	IN BRIEF	GRAPHICS & SOUND	
COMMODORE 64/128			
Models: C64: 128: 128D **Package:** C64 and 128 keyboard plus C2N tape recorder, often plus accessories. C128D keyboard plus system box disk drive. **Memory:** C64 64K: C128 128K: C128D 128K **Processor:** C64 6510: 128/128D 8502 plus Z80 for use in CP/M mode **Recommended Retail Price:** C64 £159.99 – £179.99 according to package: C128 £199.99 stand-alone, £229.99 with C2N: £249.99 with C2N plus software: C128D £399.99	The 64 is an excellent games machine. The 128 and 128D can be configured for business use using the CP/M standard and giving access to a vast range of business and utility software. The 64 is a particularly difficult machine to learn programming on due to out-date BASIC	**Resolution:** C64 320 x 200: C128/128D – as 64 in 64 mode, plus 640 x 200 in 128 modes (80 column display) **Palette:** 16 **Colours:** 8. Note – Attribute system places minor limitations on use of colours **TV:** Yes **Monitor Output:** 64 – composite video: 128/128D – RGB for 80 column display **Monitor Supplied:** No **Monitor Options:** C1900M £119.99 mono: C1901 £249.99 colour: C1084 £349.99 colour:	or suitable RGB comp monitor **Sprites:** 8 **Speed:** Good for scrolling and sprites, poor otherwise * * * **Speaker quality:** Output through monitor **MIDI:** Many third party interfaces available **Stereo Output:** N **Performance:** [illegible] icated for the pr [illegible] be the most [illegible] usage [illegible] for both MIDI and programm [illegible] chip.
COMMODORE AMIGA			
Models: Amiga 500: A1000: A2000 **Package:** Keyboard, with built-in disk drive. A1000 is discontinued, so packaging will depend on different dealer policies **Memory:** A500 512K: A1000 £256K. A2000 £1024K **Processor:** Motorola 68000 **Recommended Retail Price:** A500 £499.99: A1000 none – discontinued: A2000 £1236.25	Stunning specification, with custom chips giving enormous graphic power. Despite initial uncertainty, software support now seems assured. Although overshadowed by the ST in the UK to date, overseas sales (particularly in US) are high. An excellent machine for those who can afford one.	**Resolution:** From 320 x 200 to 640 x 400 **Palette:** 4096 colours **Colours:** 16 : 32 or even 4096 **TV:** Modulator extra **Monitor Output:** SCART **Monitor Supplied:** No **Monitor Options:** Commodore A1081 at £349.99 **Sprites:** 8	**Speed:** Very fast with right software * * * **Speaker Quality:** Commodore custom chip **MIDI:** Not built-in. Third party interfaces available **Stereo Output:** Yes **Performance:** 4 channels. Built-in text to speech synthesis. 9 octave range: very sophisticated indeed.
IBM & COMPATIBLES			
Model: IBM's PC is the original. The many clones include Amstrad's PC1512 and 1640 series, Tandy's 1000EX, Spectrum Bondwell 32, etc. The specifications here apply to most compatibles, but check with dealers first. **Package:** Depends on manufacturer, eg Amstrad supply all machines with monitors. You can buy the bare bones or the works. **Memory:** Usually 512K-640K **Processor:** Intel 8086, 8088 or variants **Recommended Retail Price:** From around £400 for the cheaper basic clones to £1500 for machines with hard disk, colour monitor etc. IBM machines are quite a bit more expensive.	Superb value if you want an all-round machine, but the PC still betrays its business origins. Increasing number of games software releases, but few of these are of the coin-op arcade variety. Definitely not to be considered if entertainment is your first priority.	**Graphics are not provided as standard on PCs, but nowadays most machines are sold with the necessary add-on boards already fitted. There are three main standards: CGA (the most common colour display), EGA (normally fitted as upgrade but is built in on eg Amstrad PC1640) and Hercules (mono).** **Resolution: CGA** (Colour Graphics Adaptor) 320 x 200 low res: 640 x 200 medium res: **EGA** (Enhanced Graphics Adaptor) – both CGA graphics modes plus 640 x 350 high resolution: **Hercules** 720 x 348 **Palette: CGA** – two different colour schemes available in low res: **EGA** 64	**Colours: CGA** – 4 in low res, mono in high res: **EGA** – 16 **TV:** No **Monitor Output:** Normally RGB **Monitor Supplied:** With most packages **Monitor Options:** Any RGB should do the job **Sprites:** None **Speed:** Varies * * * **Speaker Quality:** Generally poor **MIDI:** Third party interfaces available **Stereo Output:** No **Performance:** Not really a machine for the musician: Atari ST offers rather more.

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	HARDWARE & SOFTWARE		BUYLINES
Two disk drives are commonly available – the C1541 and the more recent C1571 **Disk Format:** 5.25in: 1541 140K formatted, 1571 340K formatted; 128D has built-in drive **Disk Price:** £1.00 (less in bulk) **Disk Performance:** Commodore 1541 drive is notoriously slow and noisy; 1571 marks substantial improvement **Keyboard:** Raised plastic keys with audible tactile feedback, plus function keys. Cursor key arrangement very awkward **Joystick/Mouse:** Provision for two standard	joysticks. Mouse not suplied. Commodore 1350 mouse available, plus thrid party manufactured models **Ports:** 2 joystick, expansion, cassette, non-standard serial, composite video (C64) RGB (128 & 128D), TV, User port *** **Existing Software Base:** Excellent. Only rivalled by the Spectrum. **Current Releases:** Still pouring out **Games:** Arcade action second to none. Adventures – good selection	**Graphics:** Good selection. Quality of graphics means that programs can be reasonably sophisticated **Music:** Good wide range of sound editors, some samplers. Many MIDI utilities available **Prospects:** Supply will eventually slow, but Commodore games may last longer than Spectrum, due to portability of games from US **Software Loading:** Slow as always on cassette and disk loading not as fast as it should be due to slowness of dedicated drive. Most software produced with fast loader routines.	**Best Buy Price:** Old style C64s, dating back to before the redesign, can be picked up for around £130-£150. Otherwise, with Commodore's policy of letting the dealers devise their own 'bundles', pick the one you like best. **Second Hand Availability:** Good for all models. Check small ads in various mags. **Maintenance:** Under guarantee take machine back to dealer. Should get straight replacement within 30 days of purchase (at dealer's discretion). Ex-guarantee, use independent repair company.
Disk Format: 3.5in: 880K formatted: drive built-in **Disk Price:** Around £3.00 **Disk Performance:** Noisy and surprisingly sluggish **Keyboard:** 94 key, 10 function keys, numeric keypad, separate cursor cluster **Joystick/Mouse:** Mouse supplied as standard **Ports:** Two joystick/mouse, Audio output left	and right, Extra disk drive, Serial RS232, Centronics parallel, RGB/video, Monochrome video, Expansion bus *** **Existing Base:** Small in comparison to 8-bit machines **Current Releases:** Beginning to pick up **Games:** Arcade products not yet up to the capabilities of the machine. Few adventures	are available, but they are generally of good quality. **Graphics:** Quality and range outstanding. **Music:** Potentially superb. Little MIDI support as yet. **Prospects:** Good, but A500 needs to establish a larger user-base before becoming a prime development machine. **Software Loading:** A noisy process	**Best Buy:** Not at present sold below RRP, although it can be worth checking various dealers for special packs. **Second Hand Availability:** Limited as yet. **Maintenance:** Within guarantee should be returned to the dealer.
Disk Format: Mostly 5.25in. Some very new models use 3.5in: almost always 360K formatted: drives built-in **Disk Price:** Well under £1.00 for 5.25in, around £3.00 for 3.5in **Disk Performance:** Reliable and pretty fast: hard disks, of course, are even faster **Keyboard:** All models used raised plastic keys with audible tactile feedback and include function keys and separate numeric keypads. A wide variety of third-party keyboards is available. **Joystick/Mouse:** Two different joystick standards exist, IBM (analogue) and Amstrad (Atari	style – the norm for games playing). Most games support either IBM or both, but Amstrads can now be adapted to use IBM joystick. Newer models (eg Amstrad) include mouse in package. Third party mice are available for mouseless PCs. **Ports:** Varies. Expect Centronics parallel, RS232, expansion port with most machines – but some of these are optional. *** **Existing Software Base:** Vast **Current Releases:** Still pouring out, with price levels dropping as well **Games:** Cheaper machines have meant that	more games are being released on the PC – both arcade and adventure. CGA graphics standard used to be predominant, but an increasing number of EGA games with superior graphics are appearing. PC only recently perceived as a machine with games potential **Graphics:** Many sophisticated packages for business presentation graphics; not too much for the artist **Music:** Fair selection of MIDI packages and interfaces, though these tend to be expensive **Prospects:** Won't dwindle as long as there are PCs on desks **Software Loading:** Good, fast, reliable	**Best Buy Price:** All-in-one packages – such as the Amstrad – represent good value, but if you know what you're doing even better bargains can be had from discount stores. If you don't know what you're doing go for a reputable brand. **Second Hand Availability:** PCs can often be picked up in auctions of computer and office goods, or through magazine adverts. **Maintenance:** Return to dealer if faulty, but a maintenance contract – often surprisingly cheap – can guarantee your peace of mind.

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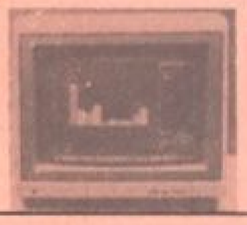

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	IN BRIEF	GRAPHICS & SOUND	
SINCLAIR SPECTRUM			
Models: Plus (48K and 128K); Plus 2, Plus 3 **Package:** Keyboard and built-in tape/disk, plus joystick, selection of software. **Memory:** Plus – 48K or 128K; Plus 2 – 128K; Plus 3 – 128K **Processor:** Zilog Z80 **Recommended Retail Price:** Plus – none, shop around; Plus 2 £139.00; Plus 3 £199.00	The Spectrum is primarily a games machine and should be bought only as such. It is unsuitable for business use, with low memory capacity and only a 32 column screen display. For productivity (ie graphics and music type applications) use, it is not really sophisticated enough for serious projects. Utilities fair but serious users will want to upgrade before too long.	**Resolution:** 256 x 192 **Palette:** 8 **Colours:** 8. Only two colours can be used within any 8 x 8 pixel square. Limits graphics potential. **TV:** Yes **Monitor Output:** RGB **Monitor Supplied:** No **Monitor Options:** No dedicated Amstrad/Sinclair monitor, but any RGB suitable. **Sprites:** None **Speed:** Average to fast for 8-bit * * * **Speaker Quality:** Plus – dreadful; Plus 2 and 3 – better **MIDI:** Plus 48K no; Plus 2/3 128K yes (non standard socket built-in) **Stereo Output:** No	**Performance:** 3 channels. Poor performance – sound has never been the Spectrum's strong point, and few Spectrum software titles make much effort in this area.
NINTENDO ENTERTAINMENT SYSTEM			
Package: Standard version – console, plus game controllers, plus 1 game (*Super Mario Brothers*). Deluxe version – console, game controller, light gun, ROB robot, 2 games **Recommended Retail Price:** Standard model £99; Deluxe model £159	Japanese software base not as good as Nintendo's, but what counts is how many titles reach UK. Mastertronic have given strong support to machine, so prospects are reasonable.	**Resolution:** 256 x 240 **Palette:** 52 **Colours:** **TV:** Yes **Monitor options:** Not yet supported * * * **Performance:** 3 channels. Includes speed synthesis	
SEGA MASTER SYSTEM			
Package: Console using cartridge or smart card, plus light gun, game controller and 1 game (*Hang On*) **Memory:** **Processor:** **Recommended Retail Price:** £99	A reasonable buy if a console is what you want. Interesting, too, because we may see more add-ons from Japan that give it extra power. However, at the moment nearly all software is Japanese in origin and this is not to everyone's taste. It remains to be seen if it will receive any third party support.	**Resolution:** 256 x 192 **Palette:** 64 **TV:** Yes **Monitor Options:** No * * * **Speaker Quality:** **MIDI:**	**Stereo Output:** **Performance:** 3 channels. Good sound effects on most games

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HARDWARE & SOFTWARE	BUYLINES
Disks for Plus 3 only **Disk Format:** 3in flippable; 180K formatted per side; drive built-in **Disk Price:** Around £3.00 **Disk Performance:** Generally fast and reliable. Some hitherto unforeseen compatibility problems may arise with commercial software – but they haven't surfaced yet. **Keyboard:** The Spectrum Plus keyboards are made of hard plastic set into the casing, with a squidgy feel. The Plus 2/3 keyboard ahas raised hard plastic keys. Unlike the older model, it can be used more easily for word processing. **Joystick/Mouse:** Non-standard on all models. Suitable interfaces widely available. Compatible joystick included in Plus 2 and 3 packaging. Third party mice available but mouse compatible software rare. **Ports:** 2 joystick, RS232/MIDI, RGB monitor, Audio, Numeric keypad, Expansion I/O, TV * * * **Existing Software Base:** Second to none **Current Releases:** Most major software firms are continuing to bring out the majority of their titles on the Spectrum. **Games:** A huge number of arcade titles ranging from abysmal to excellent. Wide range of adventures, many Quilled. **Graphics:** Fair selection, some of which squeeze better graphics performance from the machine than one would expect from the specification. **Music:** A couple of MIDI interfaces available, plus Cheetah Specdrum drum synth. **Prospects:** **Software Loading:** Cassette versions slow as ever	**Best Buy Price:** Plus can now be picked up cheaply as no longer manufactured. Try to find a shop selling off old stock at around £50. **Second Hand Availability:** Good. **N.B. The original Sinclair 48K model can still be found second hand. If you don't mind the rubbery keyboard it could represent a good investment. Ensure that you get the 48K model – there is no outward way of distinguishing it from the 16K models, which are quite useless for running contemporary software.** **Maintenance:** Amstrad-badged Spectrums have a year's guarantee – take the machine back to the dealer who sold it to you. For pre-Amstrad Spectrums (Plus and Plus 128) bought as new and within guarantee period, contact Sinclair Research.
A disk system is available in Japan, using proprietary non-standard Nintendo disks. The format provides greater memory capacity and hence enhanced versions of some software (eg *Super Mario Brothers II*). The system is not available in the UK at present. **Keyboard:** **Joystick/Mouse:** **Ports:** RF TV, video; audio 1; game controller slots; cartridge slot **Additions of light gun and robot make this a suitable machine for younger children. Not a true computer; recommended as games console only.** * * * **Existing Software Base:** Huge (in Japan) **Current Releases:** Some Because of the Yen to Pound conversion rate, Japanese software is likely to remain expensive. **Games:** Good range of arcade-type software. Some arcade adventures **Graphics:** **Music:** None **Prospects:** Good, but rate of import will depend on machine's popularity in UK. **Software Loading:**	**Best Buy Price:** As RRP **Second Hand Availability:** Not as yet **Maintenance:** Manufacturers guarantee
Disks Not available **Keyboard:** **Joystick/Mouse:** **Ports:** 2 game controllers; cartridge slot Robust casing. Not designed for future expansion. Not a true computer; recommended as games console only. * * * **Existing Software Base:** Large **Current Releases:** Well supported by UK distributor Mastertronic **Games:** Wide selection of arcade titles, generally considered to be of high quality. No adventures. Bulk of releases currently confined to conversions of Sega coin-op games. **Graphics:** None **Music:** None **Prospects:** Good if support by 'Tronic and parent company Sega continues **Software Loading:**	**Best Buy Price:** As RRP **Second Hand Availability:** **Maintenance:** One year's guarantee. Back to dealer if faulty

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Once you've read your way through your latest issue of ACE – and digested all the features, game reviews, news and other equally satisfying sections of the magazine – it's probably time to pay a visit to your newsagent for more of the same. Should you happen to be an extremely quick reader however, you may have a few minutes to fill before the mad rush to buy the next ACE. This is when you'll appreciate our Random Access section – we've got fiendish puzzles, cryptic crosswords, mini-listings and cartoons to entertain – and possibly reward you. Because should you strike it lucky you could walk away with £25-worth of software – just for enjoying yourself! So don't waste any more time – get to it!

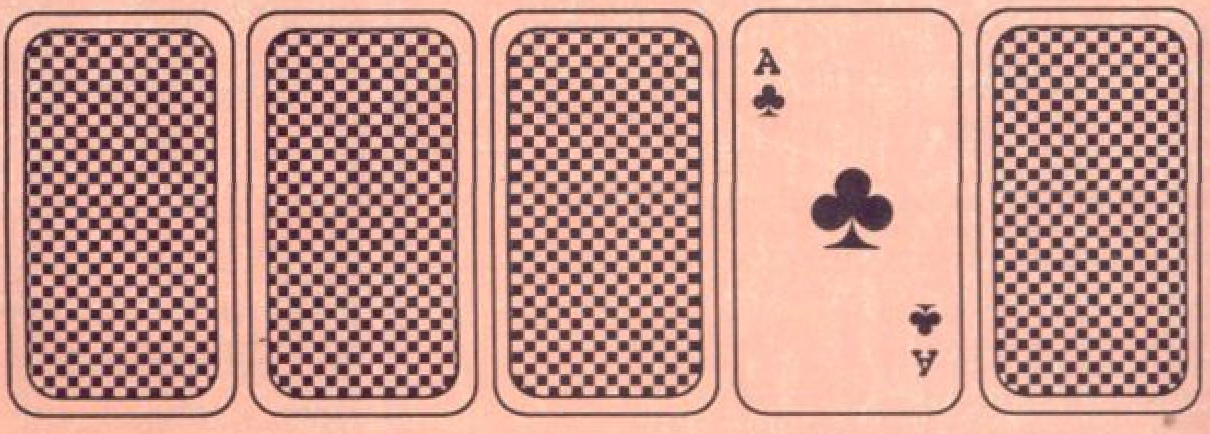
GET INTO PRINT!!

The cartoons appearing on these pages are drawn by one of ACE's resident artists Steve Spicer. Steve's always overworked, however, and this is where you come in – if you reckon you've got the ability, time and most importantly the originality to be able to produce a couple of cartoons that'll give everyone a chuckle, then we'd very much like to see them. So get to it! But remember to keep them clean!

Send your contributions to RANDOM ACCESS at the usual address. For the best chance of reproduction, your artwork should be in black on stiff white paper.

THE ACE PUZZLE No2

Set by Archie Medes



Puzzles can intrigue, infuriate and even delight – if you crack them. If you also get the chance of winning £25-worth of software for having your correct entry pulled from the hat first, well, you're laughing aren't you?

Professor Otto Hex of the Institute of Advanced Mathematics has recently received the following communication from his colleague Professor Browze.

Dear Otto,
Here is an interesting problem for you. I have five playing cards, taken from a standard deck. They are the ace, two, three, four and five of clubs. I have shuffled the five cards and have dealt them face up in a row and am now about to move them in the following series of operations:

1. Exchange the positions of the two cards either side of the ace.
2. Exchange the position of the ace and the two.
3. Exchange the positions of the two cards either side of the five.
4. Exchange the four with the card to its immediate left.
5. Exchange the position of the two cards either side of the three.
6. Turn all the cards, except the ace, face down.

The cards are now as you see them here. Can you determine the order that the cards are now in (go from left to right) and also say how they were arranged at the start of the experiment (again left to right)?
yours puzzlingly,
Browze.

It didn't take Otto long to find the answers, but can you? Also, can you write a simple listing to get your micro to provide you with the answers?

PUZZLE ENTRY FORM

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I think the original order of the cards was:

— — — — —

And the final order was:

— — — — —

Send your answers to

PRIZE PUZZLE 2, ACE, 4 Queen Street, Bath BA1 1EJ

Closing date: May 10th

AMSTRAD R&D DEPT

ODD ACE FACTS

Steve Cooke started going bald when he was **15** ● **Andy Smith** is a **trained cobbler** ● This page was printed directly from an **Apple Macintosh Xpress computer file** that was 26K in length● Rod Lawton worked in a **slaughterhouse** ● Andy Wilton **couldn't think** of any ACE odd facts ● ACE was originally going to be called **ICE** but was then **renamed Blitter** and finally, just before the first issue went to press – **ACE** ● Pete Connor comes from **Rochdale** ● The people **in the photograph below** designed this issue of ACE – give them a **big hand!** ● Rod Lawton came **173rd** in the Broad Oak **Half-Marathon** ● Xpress, the program used to lay-out and design ACE, takes up nearly **500K** ● Andy Smith **used to live** in **Singapore** – sometimes we think **he still does** ● Chris Anderson has an **afghan** coat ● **All the coffee** in the ACE office is **FREE** ● Trevor Gilham got engaged to the **girl in the shop next door** ● Chris Anderson **got appendicitis** immediately after seeing **Bob Wade** for the first time.

Left to right: Ange, Julia, Gordon, Kevin, Trev (art editor), Ollie and Sally - the ACE Art Team.

ACE PRIZE CROSSWORD 2

Set by Mips

The first correct entry taken from the postbag wins software worth £25.00. Closing date for entries May 10th.

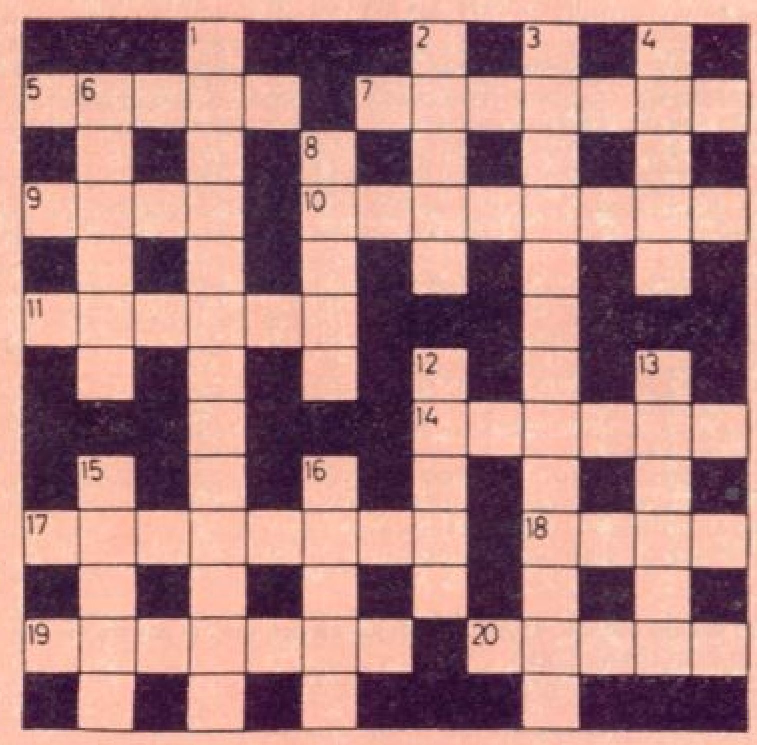
The Ace crossword is cryptic. The answer might be an anagram, or formed from the end of one word and the beginning of another, or simply another word hinted at by the clue. Most – but not quite all – of the answers are computer-related.

Across

5. Eric, lonely, clasps his computer copy (5)
7. Game body of fighting men (7)
9. Wear out whether it's hard or soft (4)
10. Room we, the magazine, make for a game (5,3)
11. Game seeker giving one the run-around (6)
14. A paint developed by Ocean Games (3,3)
17. Mad rush made pets upset (8)
18. Break into system and get the chop (4)
19. Peripheral that's character forming (7)
20. Girl giving Amstrad software to Ma (5)

Down

1. Amusement provided by games in the last ACE (13)
2. Key-tidy (5)
3. Urban guerilla from 13 (13)
4. 'May the ..... be with you' (5)
6. Micro...... wrestling from Microprose (6)
8. Computer employers (5)
12. Reset new characters for drive (5)
13. PC Coma – new product from software house (6)
15. Rita playing on a PC (5)
16. Cleverly holding the bar (5)



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Dan Dare II	D4 5.50	D3 6.25	D4 5.50
Predator	D4 6.75	D4 6.75	D4 6.75
Rolling Thunder	6.25	D2 6.75	D4 6.75
Black Lamp	5.50	D4 6.25	D4 6.25
Bedlam	6.25	D2 6.75	D4 6.75
Arkanoid II	5.50	D3 6.25	D4 6.25
Tour de Force	5.50	D4 6.75	D4 6.75
Gunsmoke	6.25	D4 6.75	D4 6.75
Victory Road	5.50	D3 6.25	D4 6.25
Roy of the Rovers	6.75	D4 6.75	D4 6.75
Wizard Warz	6.25	D4 6.75	D4 6.75
Navy Moves	D4 5.50	D3 6.25	D4 6.25
Mask III	5.50	D4 6.75	D4 6.25
Impossible Mission II	6.25	D4 6.75	D4 6.75
Morpheus	10.50	D5 10.50	D4 10.50
Hunters Moon	6.25	D3 6.75	D4 6.75
19 Boot Camp	6.25	D4 6.25	D4 6.25
Enduro Racer II or I	6.75	D4 6.75	D4 6.75
Side Arms	D4 6.25	D2 6.75	D4 6.75
Firefly	D4 5.50	D3 6.25	D4 6.25
Vampires Empire	D3 6.25	D3 6.75	D4 6.75
10	5.50	D4 6.25	D4 6.25
Ikari Warriors	6.25	D4 6.75	D4 6.75
Tetris	6.75	D4 6.75	D4 6.75
Gunboat	6.25	D4 6.75	D4 6.75
A.T.F.	6.25	D4 6.75	D4 6.75
Terramex	6.25	D4 6.75	D4 6.75
Roadwars	6.25	D4 6.75	D4 6.75
Winter Olympiad 88	5.50	6.75	5.50
Ramparts	6.25	D2 6.75	D4 6.75
Buggy Boy	D3 5.50	D4 6.75	D4 6.75
Alt. Word Games	5.50	D4 6.75	D4 6.75
Airbourne Ranger	10.50	D6 10.50	D6 10.50
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Gryzor	D4 5.50	D3 6.25	D4 6.25
Combat School	D4 5.50	D3 6.25	D4 6.25
International Karate +	6.75	D4 6.75	D4 6.75
Flying Shark	5.50	D4 6.25	D4 6.25
Madballs	4.99	D4 6.25	D4 6.25
Basket Master	5.50	D4 6.25	D4 6.25
Rastan Saga	5.50	D4 6.25	D4 6.25
Thundercats	D3 5.50	D4 6.75	D4 6.75
Rampage	6.25	D4 6.75	D4 6.75
Matchday II	D4 5.50	D3 6.25	D4 6.25
Rimrunner	D4 6.50	D4 6.50	D4 6.50
Pink Panther	6.75	D4 6.75	D4 6.75
Troll	6.75	D4 6.75	D4 6.75
Task III	6.75	D4 6.75	D4 6.75
Project Stealth Fighter	6.75	D6 10.50	D6 10.50
Vampire Empire	D3 6.50	D3 6.75	D4 6.75

Title	Spectrum	CBM 64	Amstrad
Gunsmoke	6.50	D4 6.75	D4 6.75
Spy V Spy Trilogy	D4 6.75	D4 6.75	D4 6.75
North Star	D4 6.75	D4 6.75	D4 6.75
Hunt for Red October	10.50	D5 10.50	D5 10.50
Football Director	6.25	6.25	6.25
Gunship	D3 6.75	D5 6.50	D5 10.50
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Title	Atari ST	Amiga
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Power Play	12.95	12.95
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● **SUPERB AMSTRAD PACKAGES**: CPC 6128 computer, colour monitor, DMP2000 printer, over £250 worth of Software including word processor, also joystick and cassette deck. The lot for just £600ono. Tel: Stephen 021 350 2846.

● **AMSTRAD CPC 464** with over 100 games plus colour monitor and cassette recorder. All that for £280. All that plus printer £280. All that plus printer £380. Telephone Chertsey (0932) 560485 after 5pm.

● **SPECTRUM PLUS 2**, Cheetah Mach One joystick and games including 720 degrees, combat school, renegade and starglider. All boxed. Mags included too! worth £250 sell for £135 ono. Phone Winston (0767) 315114.

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● **SPECTRUM PLUS**, tape deck, joystick,software(£550 plus),books (£40plus), magazines (£150plus). All worth £900plus, will accept £250 ono. Phone Cambridge (0223) 88426.

● **C64**, 1541 disk drive, over 1000 games on disc and tape plus mass £380 ono. Tel. Pagham 266267.

● **ATARI 520 STFM**, six months old. Over £200 software including Starglider, Barbarian, Gold Runner, Star Wars £280. Also C64, 1541 disc drive £400 software, £180. Both excellent condition. Tel. 01876 5053 6-9 pm.

● **ATARI 520 STFM**, mouse, joystick, 20 discs plus mags. Six month guarantee. Immaculate condition £260 ono. Phone Doncaster S. Yorks. (0302) 728260 9am-5pm.

● **COMODORE 64**, disk drive, modem, 150 games. Good Condition £200. Phone 01-533 3664.

● **C64**, four months old with data cassette, 28 original games, joystick, designers pencil, music make, leads & power pack for £180 please ring 01 986 9047.

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● **BARGAIN C64** with C2N, joysticks £480 original games, double, all ZZAP mags, desk. Cost over £810, quick sale £190. All boxed. Phone (0707) 873015.

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● **C64**, 1541c drive, Euromac Pro joystick,quick disk plus cart.,50 disks, 100 capacity lockable disk storage box £270 ono. Tel: Leicester (0533) 23014 ask for Mark after 5pm.

● **SEGA CONSOLE**, Three months old lots of games including Out Run, Space Harrier, Rocky. Worth £265. Sell for £195. Phone after 4 pm on Cambridge 881006.

THE ACE HELPLINE

Here's a great way of receiving free advice from public-spirited readers. If you make use of this service, please respect the Helpline code:
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• Do not make phone calls at anti-social hours.

• Beyond Zork, Bureaucracy, Knight Orc, Guild of Thieves, Pawn, Leather Goddesses of Phobos, Wishbringer, Zork 1, Red Moon, Return to Eden, Snowball, Worm in paradise, Price of Magic, Lord of the Rings, Kings Quest II, Hulk, Spiderman, Dungeon Adventures, Colossal Adventures, Adventure Quest, Macbeth I, II & IV, Fourth Protocol I, II & III, Jinxter, Hollywood Hijinx, Trinity, Moonmist, Cutthroats, Zork II & III, Gnome Ranger (Part 1), Space Quest 1, Space Quest II, Planetfall, Stationfall, Infidel, Ballyhoo, Enchanter, Sorcerer, Spellbreaker, Witness, Hitchhikers Guie to the Galaxy, Seastalker, Mindshadow, Sydney Affair, Kings Quest 1, Starcross, Leisuresuit Larry in the Land of Lounge Lizards, A Mind Forever Voyaging, Lurking Horror
RGB Marshall, 3 Mereside Avenue, Congleton, Cheshire, CW12 4JZ.
Tel: 0260 279786.

• I have completed the following: The Pawn, The Bard's Tale, Ultima IV, Phantasie I, Dracula, Never Ending Story, Zork III, Wishbringer, Enchanter, Borrowed Time, Kobyashi Naru, Heavy on the Magick, Legacy, The prince of Magic, Claws of Despair, Wizards & The Princess.
Derek Wong, 42 Ingram Road, Thornton Heath, Surrey. CR4 8EB.

• Wishbringer, Labyrinthm The Hobbit, The Hulk, Spiderman, Seabase Delta, Kobyashi Naru.
Ann Gray, 9 Alness Close, Birchwood, Lincoln, Lincs. LN6 0YX.

• Enchanter, Sorcerer, spellbreaker, Leather Goddesses of Phobos, Infidel, Zork I, II & IIIm The Pawn, Kingdom of Hamil, Aftershock, Adventure Quest, Angelique a Grief Encounter, Arnold Blackwood Trilogy, The Big Sleaze, Black Fountain, Bugsy, Castle Blackstar, Castle of Skull Lord, Cursed be the City, Dracula, Dungeons Amethysts Alchemist n 'Everythin', Escape from Khosmia, Espionage Island, Fantasia Diamond, Forest at World End, Gremlins, Haunted House, Hermitage, Heros of Karn, The Hollow text and Graphic, Hunchback, Imagination, Jewels of Babylon, Kobyashi Naru, Lifeterm, Lords of Time, Mansion, Message from Andromeda, Mindshadow, Monsters of Murdac, Mordens Quest, Mountains of Ket, Never Ending Story, Nova Nythyhel, Planet of Death, Rebel Planet, Rigels Revenge, Robin of Sherwood, Robicide, Seabase Delta, Sharpes Deeds, Ship of Doom, Sould of Darkon, Spytrek, Subsunk, Theseusm, Top Secret, Very Big Cave Adventure, Warlord, Winter Wonderland, Wizard of Akryz.
Graham Wheeler, 2 Burford Close, Southdown, Bath, Avon, BA2 1JF.
Tel: 0225 26919.

• The Pawn, Sorcerer, Planetfall, Leather Goddesses of Phobos.
C.F.H. Bass, 21 Third Close, E Molesey, Surrey, KT8 9PW.

• Heroes of Karn, Imagination, Seabase Delta, D.A.A n Everythin, Fourht Protocol I, II & III, Ship of Doom, Message from Andromeda, Kobyashi Naru, Questprobe III, Forest at Worlds End, Wild Bunch, Knight Tyme, Spellbound, The Hobbit, Bugsy Part 1 only, Mops To, Heroes of Karn, Seabase Delta, Gremlins, Lord of the Rings (Part II only), Robin of Sherwood, After Shock.
Russell Cooper, 12 Butlers Close, 52 Butlers Road, Handsworth Wood, Birmingham. B20 2PA.

• Adventure Quest, Apache Gold, Arnold Goes to Somewhere Else, Boggit, Bored of the Rings, Brawn Free, Castle Blackstar, Castle of Skull Lord, Classic Adventure, Colossal Adventure, Crystal Theft, Dodgy Geezers, Dracula, Dungeon Adventure, Dungeons, A.A 'n Everythin, Emerald Isle, Erik The Viking, Escape from Khoshima, Espionage Island, Fantasia Diamond, Forest at Worlds Ends, Heavy on the Magick, Heroes of Karn, Hitchhikers Guide to the Galaxy, Hobbit, Imagination, Inca Curse, Jewels of Babylon, Kentilla, Lords of Time, Message of Andromeda, Mindshadow, Morden's Quest, Necris Dome,Never Ending Story, Price of Magik, Project Volcano, Qor, Questprobe III, Red Moon, Return to eden, Seabase Delta, Seas of Blood, Smugglers Cove, Snowball, Souls of Darkon, Spytrek, Subsunk, Sydney Affair, Terrormolinos, The Case of the mixed-up Shymer, The Trial of Arnold Blackwood, Vera Cruz Affair, Very Big Cave Adventure, Warlord, Wise and Fool of Blackwood, Worm in Paradise, Zork I
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For technical help on Commodore 64 Basic and Machine/Assembler language. Please contact Johnathan Kendall (for most problems would you please write!) I will endeavour to reply to all letters – if you enclose a stamped addressed envelope!
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● **SPECTRUM 128**, Atari 2600, £650 of software, hardware and magazines. Most recent titles. Quick sale needed so any offers considered. Phone 0992 32187 after 5pm ask for J.S. Doolan.

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● **AMSTRAD MONO CPC 464**, DMP200, Andrum mouse, joystick over £560 worth of games. Total over £1050 sell £620ono PLUS. Buy quick and get two bikes (BMX & Folding) and organ. AFTER 6pm 01 850 5228

● **SPECTRUM PLUS 2**, 2 joysticks, printer with paper, over £200 worth of software. Will sell for £220 ono. Very good condition. Tel: Johnathan Bray 01 946 2507. After 6.15pm.

● **AMSTRAD 6128** with built in disc drive £100 worth of games and joystick £300 ono Tel: 0902 726404 after 4.30 still in good condition only one year old.

● **AMSOFT 3" CASED DISKS**. 5 for £12, 10 for £21.95. Send cheques/PO's to First Byte Software, PO Box 50, Yeovil, Somerset, BA20 1XS. Tel: 0935 851265.

● **SPECTRUM 48K**, micro drive plus cartridges, over £1000 worth of software. Kempton joystick, interface, data recorder interface II, complete input.plus home computer course £280 ono Chris (0959) 75597.

● **AMSTRAD 464** colour monitor, over £250 worth of games, lots of mags and joystick worth £600. Sell for £300 ono. Phone Matt Oakley on (0892) 28563. After 7.00pm.

● **C64** tape deck, disk drive, action replay 3 over £875 worth of software latest original software. 2 joysticks, blank disks and notcher. Worth over £1200 bargain £300 ono. 01 363 9031.

● **C64**, disk drive, CN2, joysticks and loads of software including lightpen, speech and music utilities. Worth £500 bargain at £300! Phone Gary, Oxshott 3337 for a full list of goodies.

● **PLUS 4 COMPUTER**, CN2, joystick and lightpen. Ideal for someone just starting in computing. Also includes lots of software bargains £50. Phone Gary, Oxshott 3337 for details

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● **464** Colour, disc drive, Mirage Imager MK3, 64k Memory Upgrade, Silicon disc, 2 joysticks, books and manuals, AA dust covers, 27 AA magazines plus 2 binders, AA Cheat Mode 85-86, CPM 2.2 disc, 3 blank discs. Over £1500 games, plus mystery free gift. All over £2500. Sell for £400 or bid lower. Contact Andy on 01 773-2096 (9-5).

● **CBM64** one 1541 disk drive, 1701 monitor, with printer plotter £300 plus original disk and tape software and 100 blank discs, plus other items £450 the lot. Phone Canvey Island 696999.

● **CBM 64 C2N** cass 1541 drive MPS 803 printer dolphin dos fitted £500 of software, freeze frame mouse, modem. £450 or close
offers. Phone 0268 682482.

● **ORIGINAL ST** games for sale. Airball, Star Wars, Rampage etc. Phone Julian on 0562 850554.

● **BBC B** OS1.2, Acorn DFS, twin 40/80 drives, Data Recorder, Wordwise, Disc Doctor ROMS plus many games and business software (25 disks). Everything in original packaging, all manuals, leads, accessories £500 (0702) 611448.

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● **COMMODORE 64 POKES,** booklet with over 125 pokes in it for £2.00. Send coins, cheques and P/Os to: Howare Lock, 26 Cricketers Road, Arlesey, Beds SG15 6SP.

● **CBM 64,** 1571 disk drive and 1701 monitor all good working order. Will split. £250 for all three or £100 per individual item. Tel: Reading (0734) 665623 after 6.30 evenings.

● **CBM 64** Excelerator, disk drive two tape decks, lots of software, joystick, magazines. Can deliver 30 miles radius. £240. Tel: Newbury 49343 after 6pm.

● **ATARI 1040 STF**, mono monitor, 1 Meg disk drive, mouse, modulator, fast basic, £80 of games, as new, phone Bognor (0243) 868 983 afternoons £450 ono.

● **AMSTRAD CPC 6128** with colour monitor, Multiface 2, rom board etc, with books and software. Worth £650. Sell for £280. Tel: Billinger 0744 894006 anytime.

● **SPECTRUM** + hundreds of games, proper datarecorder, all the loads, interface 2, Kempston equipment. Will sell for £250-£300 or swap for an Atari STFM or an Amiga 5000, must have some games. Tel; Simon 0242 820403 after 4pm.

● **SPECTRUM 48K** plus modem, ZX printer, Kempston interface, books, datacorder, 100 original games and utilities, many classics. Worth over £700. Will sell for £100 ono. Tel: (0375) 379129.

● **REVEIWER REGRETS** must upgrade to 16-Bit! Amstrad CPC 6128 (mono)_must go. Piles of discs/tapes (games utilities business)/mouse/Protext ROM/Multiface etc. £300 Tony Bridge 01 564 7839

● **CBM 64** Data cassette £50 of books £50 of brand new games, plus 30 others (originals without instructions) Programming course will sell for £110. 29 Lindon Avenue, Whitstable, Kent CTS 1RX.

● **CBM 64**, Datasette, normal cassette interface, double cassette interface, games, joystick, eighty magazines, books £110 ono Brother printer £70 ono. Everything fully boxed. Tel: Scarborough (0723) 366853.

● **SINCLAIR SPECTRUM 123** tape set, joystick, interface, £450 worth of games £240 only also seka master system £65 worth of games £120 only. Both VGC Tel: 061 445 0529.

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● **COMMODORE 64** C2N datasette, over £500 worth of originals, carry case, mags, manuals, joystick, all leads worth over £700 sell for a minimum of £190. Contact Steve on
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PEN PALS

● **ST OWNER** wishes to swap hints and tips write to David 33 Sunningdale Road, Rainham, Essex RM13 7BD or phone 20667. All calls and letters answered.

● **ST** penpals wanted. Ring 763761 and ask for Steven or write to 40 Kirstead, Fairstead Estate, Kings Lynn, Norfolk. PE30 4XF. Ring between 4pm and 6pm week days.

● **COMMODORE 64** owner wants penpals anywhere in the world to exchange hints, tips, pokes etc. all letters answered. Write ZOD 14 Sutherland Ave, Newbiggin by Sea, Northumbria. NE64 6RH. England

● **AMIGA USER**, Seeks Penpals to exchange hints and solutions. All letters answered. Write to Mat at 54 Claughton Ave, Crewe, Cheshire CW2 6EZ. Phone 216549.

● **AMIGA** contacts wanted. Write to Jon Parson, Centon Hall, University Park, Nottingham NG7 2RD.

● **St-er** seks people over 18. Interests: SF, Cobol, C, and adventures. Write to: F Reeders, Pr. Margriet Str. 9, 4797 HW Willemstad, Netherlands.

● **HELP!** Spectrum owner, 13, mole, wants to swop pokes and write about other things. Guaranteed reply. Gareth Campbell, 157 Lettercreeve, Ballee, Ballymere, Antrim BT42
2EX, Northern Ireland.

● **AMIGA OWNER** recently upgraded from humbler origins wishes to contact other Amiga users to exchange ideas/programs. Interested? Contact Paul Ireland, 15 Grove Road, Chelmsford, Essex CM2 Tel: (0245) 355114

● **ATARI ST** penpals wanted from around the world, to swap hints, tips etc. like all games. Guaranteed reply. Write to: Colin Campbell, 10 Finaghy Park North, Belfast, Northern Ireland. BT10 0HG

● **AMIGA ATARI ST OWNER** wants to swap tips etc. Write to Staroniewicz J-Michel, 17 Rue Mare Bridelle, 76190 Yvetot, France.

● **ATARI ST CONTACTS** wanted from all over the world. Guaranteed reply. Write to Nick Johnson, 19 Scholes Street, Castleton, Rochdale, Lancs. OL11 2SY.

● **AMIGA AND C64 OWNER** wants penpals worldwide to swap info, etc. disk only. All letters 100% reply, write to Desmond Graham, 21 Windsor Drive, Belfast, BT9 7FH, N. Ireland.

● **AMIGA OWNERS** wish to hear from other owners from all over the world. Write to the H.C.S. at 31 Havencrest Drive, Leicester. LE5 2AJ.

● **CBM 64** contacts wanted on disk only. Write to Leigh Ashworth, 9 Badger Close, Palace Fields, Runcorn WA7 2QW. Tel: (0928) 716 475 after 12pm.

● **ATARI ST OWNER**, needs penpals to swap tips etc. promised reply. Write to Keiron, 89 Heathershaw, Trowbridge, Wilts, BA14 7JT. As soon as possible.

● **ST PENPALS** wanted any age or sex. Must like good music demos and new order and the damned. Write to Andy, 56 Ave Vivian, Fencehouses, Houghton le Spring, Tyne & Wear DH4 6HY.

● **ST PENPALS** wanted from all over the world to swap tips etc. All letters answered. Write to Mark, 48 Greenway Road, Neath, West Glamorgan, South Wales, SA11 1HG.

● **ATARI ST** contacts wanted. Write to Jon Hampson, 155 Queens Drive, Nantwich, Cheshire, CW5 5JJ. Write soon!

● **FEMALE PENPALS** wanted worldwide to talk about absolutely anything. I am 18 and male. Interests computers, music, videos etc. Contact Stewert Waters, 6 Worthington Way, Colchester, Essex, CO3 4JZ. England.

USER GROUPS

● **MSX LINK** the Scottish office of Link publishes a monthly newsletter for all MSX users (anywhere) with hints/tips, reviews, etc. Membership is only £8 per year. Cheques/PO payable to MSX Link, send to: MSX Link, ACE), North Lodge, Cairnhill Road, Airdrie, Lanarkshire, Scotland. ML6 9RJ. Tel: (0236) 64045 after 5.30pm weekdays.

● **MSX** Computer Tape (Monthly). Send C15 tape plus £1.50. Send no tape and £2.50. Includes listings, highscores, cheats, quizes, draws, letters & hints. Phone Robert after 4pm 0424 714116, 47 Reedswood Road, Hastings TN38 8DW. UK only for 32K plus

● **ST IRELAND**. Free newsletter and details of library. Only dedicated ST Users. P.D. Software wanted and sold. Contact: Mark Kinsella, ST Ireland, Johnstown Sea Road, Arklow, Co. Wicklow, Ireland.

OTHER

● **AMSTRAD** Worldclass Leaderboard (Tape version) putting bug cured. Send £1 plus S.A.E. and blank cassette or formatted disc to 52 Angle Village, Pembroke, Dyfed, SA71 5AX, for special program and useful tips.

● **ST OWNERS** send up to 10 pictures to be digitised. Work returned on 3.5 inch disk. State Degas, Neochrome format. Only £7 chq/PO to: D Somen, 6 Aspbury Croft, Castle Bromwich, Birmingham B36 9TD.

● **SWAP** a CBM 64 with 2 joysticks, reset £800, games, C2N recorder, pokes, mags. Cost over £1000, for Amiga 500. Phone 833307. Steven, 17 Sharp Crest, Heathfield, Nr Newton Abbot, Devon TQ12 6SR

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THE BLITTER END...

ACE EDIT COMPETITION RESULT

Winner of the ACE Edit Competition was Mr. **Peter Cook** of Broomhall, who came up with the best answer for our following 'reader's' letter:

Dear ACE,

I am having a problem. I cannot get my disk version of *Elite* to load into my Sega Console. I am getting desperate. Can you help?

Peter advised that:

'As the saying goes, 'you can't fit a square brain into a round hole' and it's impossible to fit a disk into a Sega Console.'

Peter will now get the pleasure of editing a whole colour page in a forthcoming issue.

Honourable mentions go to **Iain Lowson** of Walkerburn, Scotland, who said 'Simply roll up the disk, insert it into your left ear, stir, and the resulting wax coating improves conductivity when the disk is loading (honest)'; **Tyrone Davies** of Llandovery, Wales, who said that 'At this very moment there is a compatibility problem between Sega and disk systems but Firebird are promising a Sega version of Elite in 2010.'; **Adrian Ward** of Blackpool with 'Dear Mr Wally, please fill in this 'Kidney Donor Card' and I will get back to you.'; and **Paul Holdaway** from Stockport, who said 'Certainly. First, disks on the whole tend not to load into Sega cartridge slots, so a) throw away your disk, and b) throw away your Sega Console'. Now now, let's not be

AN OOPS! AT THE RACES

Probabilities are tricky things, as any mathematician will tell you. A debate's been raging in the pages of *Computer Guardian* recently over a probability problem involving gold and silver coins, and there's no sign of a solution the readers can agree on.

Classic probability bafflers are ten a penny. How about the pie restaurant where Apple is probably better than Blueberry, Blueberry's probably better than Cherry but when Apple and Cherry are all that's available Cherry is the best bet. (It's possible, honest!)

Not satisfied? Then try this one: you buy a pack of cards, and a friend bets you £10 that along with all the black and red cards you'll find at least one green one. You start turning the cards over, and each red or black card you turn makes you feel safer because it's one less that could have turned out green. Then you get to a blue card. Now that's still another card that could have been green and isn't, so it's got to make your chances of winning even better – hasn't it? Like I say, probabilities are tricky things.

All of which is by way of an excuse for an OOPS! or two in our *Dead Cert* feature last month. The biggie was (probably) the claim made for D'Alembert's Method that it could increase a gambler's returns on an even or better chance.

Firstly the system seems to do worse than a fixed bet once your chances get much above evens, and secondly there's a strong school of thought in the offices here that no betting system can actually increase your returns in the long run anyway. A classic case in point is the Martingale system, where you bet double your stake if you lose and return to your original stake if you win. On paper it looks like a sure-fire winner: provided you end your run on a win, you'll make a profit of one coin per win regardless of how many times you lost.

In practice, gamblers run out of credit or reach the house limit so they can't always hang on for that final win – and when that happens to the Martingale better, he goes down for a bundle! We're not quite sure how D'Alembert's method shapes up here, so we'd suggest you consult your nearest professor of applicable maths before using it in anger. ●

MID-AIR COLLISION

If you thought the computing business was full of numbers and letters just waiting to confuse the uninitiated, you should try the aircraft industry. If it isn't the ASRAAMs slung underneath your YF-22A ATF it's the RWR on your GR Mk1, or even the HUD on your F-15. Small wonder then that poor old EA (not an aircraft at all but software firm Electronic Arts) should get mixed up on one of their *Interceptor* press releases. The oh-so-promising combat flight sim (check it out in previews on p18, if you haven't already) lets you take to the skies in an F-16 Falcon or F-18 Hornet. Or an F-16 Hornet, indeed. Or even an F-18 Falcon. Look, there are these two American planes and you can fly either of them, right? ●

THEY'VE GOT THE POWER.
YOU'VE GOT THE CONTROL.

OLLIE, FAWN AND...LANCE?

Entertainment as an instrument of US foreign policy is never a pretty thing folks, but this one really is a bit over the top. You thought *Raid over Moscow* was in poor taste? You thought *Green Beret* was a bit out of line? Well how about Konami's latest Nintendo cartridge for the American market. It looks like *Gryzor*, it sounds like *Gryzor* and it's even got the same box artwork as *Gryzor* – but it's actually called *Contra*. Does it have atrocity sequences, we ask ourselves? Do you have to get a bill through Congress before you can pick up extra weapons? Will the 82nd Airborne save your bacon when you get in a fix? We think the public should be told. ●

ADVERTISERS INDEX

Ashcom	103	**JCS**	114	**Selec**	113
Atari	IFC-3	**Jade**	65	**Shekhana**	97
Byteback	107	**K&M Computers**	103	**Silica Shop**	98
CBS	100	**KJC**	84	**Storm**	65
Castle	104	**Light Speed**	105	**Strategic Plus**	87
Compumart	35,65	**MPC**	110	**Sunaro**	101
Data/byte	20	**Mail-Centa**	105	**Telegames**	110
Digital Integration	6	**Martech**	62	**Telecomsoft**	42
Electronic Arts	13	**Mastertronic**	57	**Timesoft**	112
Evesham	106	**Megabyte**	113	**Turtlesoft**	102,115
Exmouth Micros	114	**Megasave**	101	**US Gold**	OBC,16-17,28-29,58,61
Firebird	49	**Mirrorsoft**	25	**Video Vault**	47
Go	53	**Ocean**	IBC,11,40,66	**Wight Computing**	111
Gremlin	14,30	**Palace**	80	**Worldwide**	112
Homesoft	114	**SDC**	118	**York Computer Centre**	114

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They called International Karate 'the greatest Karate beat 'em up yet' (Commodore User). And who are we to argue? But ARCHER MACLEAN has come up with a stunner. A third fighter. An amazing animated background. New moves (including double head-kick and a spectacular backflip). Re-mixed music by ROB HUBBARD. And balls!
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SUPER SPRINT
Licensed from Atari Games' original money-spinning coin-op, one or two players compete head-to-head over eight gruelling tracks and four levels of game difficulty. Avoid the hasards and collect golden spanners to enhance custom car features – the key to Super Sprint. With detailed animation and sound effects, Super Sprint brings the best driving excitement ever to be experienced on home computers.
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RAMPAGE
The game where the nice guys don't get a look in.
Grab your way through Chicago, punch up New York, and jump on San Francisco. Three indescribably nasty characters which bear a remarkable likeness to King Kong, Godzilla and Wolf-man, need you to send them on a rampage in an enduring 150 days of destruction, through 50 different cities.
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The evil sorcerer Drax has sworn to wreak an unspeakable doom on the people of the Jewelled City unless Princess Mariana is delivered to him. However, he has agreed that if a champion can be found who is able to defeat his demonic guardians, the Princess will be released. From the wastelands of the North, comes an unknown barbarian, a mighty warrior, wielding his broadsword with deadly skill. Can he vanquish the forces of Darkness and free the Princess? ONLY YOU CAN SAY...
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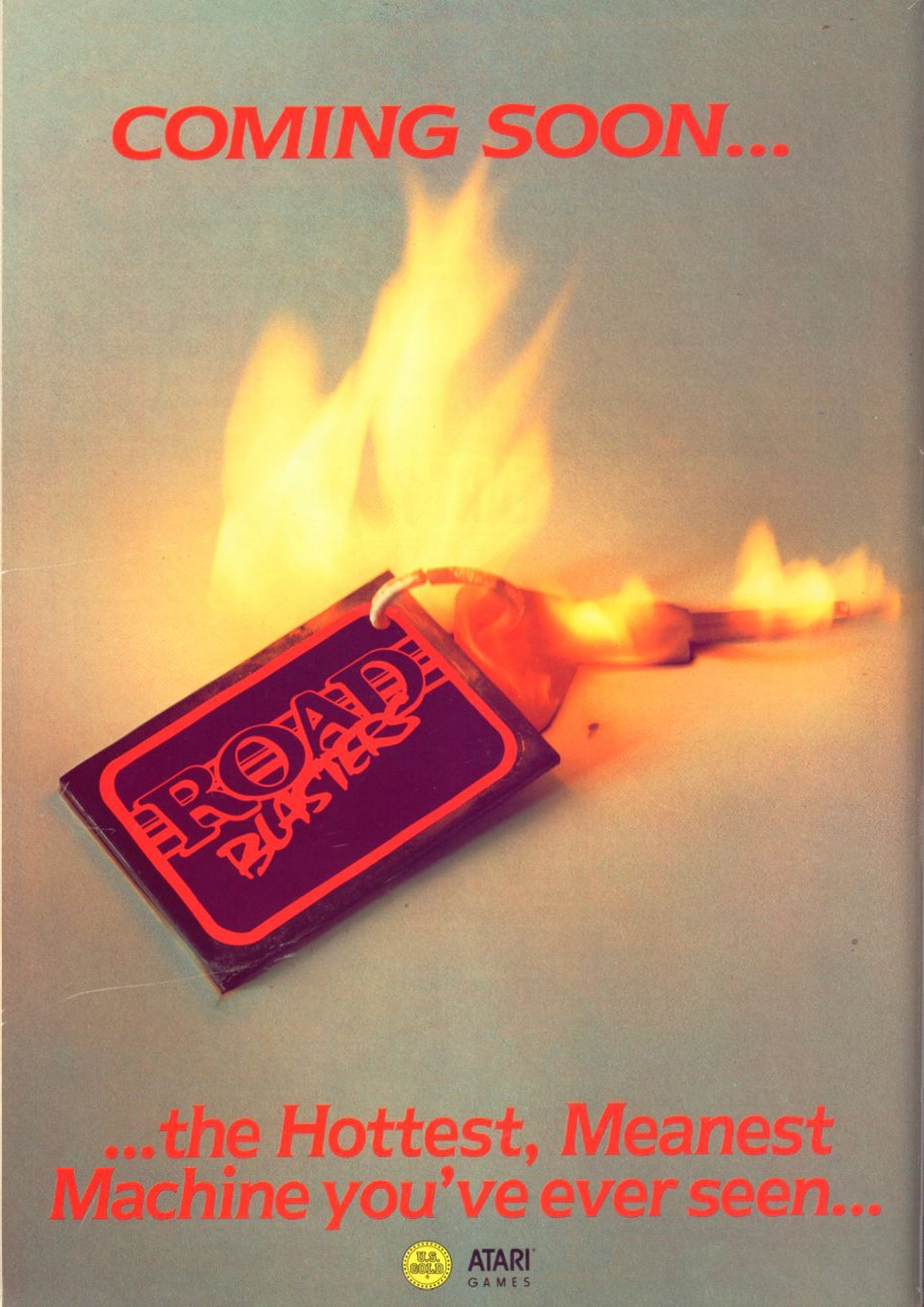
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